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THE MODERN TREATMENT OF HEMORRHOIDS

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THIS MONOGRAPH IS DEDICATED TO THAT
MODERN TEMPLE OF HEALTH TO WHOSE
PORTALS COUNTLESS THOUSANDS OF
SICK AND PHYSICALLY NEEDY HAVE
COME—AND FROM WHOSE GATES NONE
HAVE EVER BEEN TURNED AWAY—
TO
BELLEVUE HOSPITAL
NEW YORK

PREFACE TO THE SECOND EDITION

It is only a little less than a year since the original edition of the book was issued and that happy circumstance which necessitates a re-edition at this time calls for at least two statements.

Firstly, I wish to express gratitude toward my medical confréres for the unmistakable approbation they have placed upon this monograph by exhausting the first edition in so short a time; concurrent with this is my sincere thanks to the reviewers of my book for the kindly consideration they have given it.

Secondly, it must be apparent that but little of moment could have transpired on so special a subject during the short year since the appearance of the first edition. There is, therefore, no great amount of new material included in the present issue. I have added, as was promised in the first edition, a further report on the experimental employment of radium in an attempt to treat hemorrhoids; I have, moreover, introduced some graphic charts further to clarify the tables relative to the influence of age, sex, occupation and heredity upon incidence.

Judging by the numerous letters I have received from general practitioners since the publication of this book the wonderful opportunities which at present exist in the speciality of rectal diseases are receiving increasing recognition. This is indeed fortunate but even those who cannot specialize exclusively *can,* in general practice, successfully treat the commonest of rectal diseases, namely, hemorrhoids if they are afforded trustworthy suggestions as to those methods of treatment which will be productive of positive results. This book is the answer to that need.

MONTAGUE.

PREFACE

The general practitioner of medicine who meets with the problem of treating hemorrhoids naturally pauses for a moment to reflect upon his fund of knowledge on the subject. As he reflects, he becomes dimly aware of the fact that in the main this consists of broad generalizations which help him but little in the particular case awaiting his treatment. In an effort to supplement his general knowledge on the subject, he may turn to the literature for assistance. Here he will find himself in the deplorable dilemma of choosing between text-book opinions which are archaic and current literature articles which, in their enthusiastic support of some therapeutic fad, are radical if not actually fanatical.

Obviously, therefore, an unprejudiced evaluation of methods which are at present being used is to be welcomed. A digest on modern views as to the treatment of hemorrhoids is attempted in this monograph. It is earnestly hoped that the plain discussion of facts presented here will do much to place the therapy of hemorrhoids on a rational basis. It is also hoped that etiological theories presented herewith will receive serious consideration in reference to the extremely important relation that certain systemic conditions bear to hemorrhoids. In short, the author hopes to eradicate the empiric element from our present-day methods of treating hemorrhoids.

This is attempted by means of concise statements concerning, and vivid visual portrayals of, the various methods approved by the profession. To this end, photographs and diagrams have, with the indulgence of the publishers, been used very freely in an attempt to furnish, in concrete form, guides both to understanding and to treatment. Many of the illustrations shown herein are based on films used in my " Motion Picture Course in Proctology."

For those who think an extensive statement of the pathology of hemorrhoids is superfluous in a book ostensibly dealing with their treatment, I recommend reflection upon the history of every therapeutic advance in the past. In each instance they will find that such advance ran parallel with an advance in a knowledge of the pathology or pathological physiology of the condition in question. Empiricism must inevitably recede before the advance of rational treatment, and the motive power of such an advance will always be found to lie in an increased understanding of the pathology of disease. I venture the statement that in our present-day problem of medical education, the solution will eventually be found to consist in giving freer rein to the professors of the fundamental medical sciences: anatomy, physiology, and pathology, and by teaching that clinical skill can only come through the correlation of these with observations made at the bedside.

MONTAGUE.

NEW YORK CITY
June, 1926

FOREWORD

Very unfortunately hemorrhoids are generally considered as a purely surgical condition. They occur, however, in many, if not most, instances as a manifestation or sequence of medical diseases, and their early management falls very largely to the general practitioner or internist.

All too frequently, they are considered as a disease entity, while as a matter of fact they are ordinarily a result of disturbed physiology which covers a very wide range of general as well as local pathology. Doctor Montague has recognized this important fact to a most unusual degree, and it is this in particular which characterizes his monograph and renders it of exceptional value to every physician. Montague also stresses the point that many cases are amenable to medical treatment, a fact long recognized but rarely proposed in the literature of the subject.

The details of successful non-surgical treatment have heretofore been difficult to obtain, as an air of mystery has surrounded the "injection treatment" and an apparent unwillingness to discuss this phase of therapeutics has long existed on the part of very many surgeons. The straightforward and explicit statements of Montague in this particular are especially commendatory, and they give to his book a value peculiar to it alone.

The careful study and presentation of the pathology of the lesion is of particular excellence and a gratification to the student and thoughtful practitioner. This feature and the comprehensive view which the author takes of rectal diseases in their relationship to systemic disorders marks the work as that of a well-grounded specialist who has not forgotten his physiology and pathology and who realizes that he is treating a patient and not a detached viscus.

It is indeed refreshing to find that one who has elected rectal diseases as his specialty has thus carefully studied this exceedingly frequent and very important, though rarely fatal, condition from the standpoint of the patient. He has devoted himself to an exhaustive and thoroughly scientific study of the subject and has presented his material in such form as to make its utilization entirely practical for any physician, medical or surgical. The general practitioner and his patient should particularly welcome this monograph.

HARLOW BROOKS.

University and Bellevue Hospital
Medical College, New York City
June 1, 1926

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THE MODERN TREATMENT OF HEMORRHOIDS

CHAPTER I

GENERAL CONSIDERATIONS

There is at present some discussion abroad as to the precise nature of hemorrhoids and more particularly as to the most successful method of their treatment. The condition, of course, is one which has been recognized from the earliest times and its historical recognition may be taken for granted. A more detailed mention can serve no conceivable purpose in a work of practical purpose. It is highly evident, however, that a broader statement as to the nature of the disease and the present status of opinion on its therapeutics will have an immense practical value, both from the standpoint of understanding and successful treatment.

As to the importance of the condition, there seems to be little doubt in our minds. Certainly, when we view cases suffering extreme secondary anemia, the result of prolonged bleeding from hemorrhoids, or cases in which malignant changes have supervened upon chronically inflamed hemorrhoids, we can come to no other conclusion. The complaint is, moreover, one which the general practitioner is frequently called upon to alleviate. What methods, then, shall he use?

The present state of flux which characterizes medical opinion as to the relative values of the various operations, injection treatments, and the electrical methods of dealing with this disease, makes apparent the need for a clear and unbiased statement as to the relative values of these methods. Among surgeons, particularly rectal surgeons, there are various schools of thought who insistently state that the operative treatment is the *only* method. On the other hand, there are those who state quite as vociferously that injection treatment is *the* treatment. Other methods have equally ardent advocates. All these briefs in favor of one or another method may be very interesting, I am sure, to the specialist, but to the general practitioner or to the surgeon who has as yet an open mind on the subject, the presentation of so many conflicting and confusing views certainly must place him in a quandary as to how he may treat any given case with justice to his patient and to his reputation. It is the modest purpose of the following pages to present the data at hand appertaining to these various problems and, for the first time, to correlate ideas particularly in reference to treatment.

Before plunging into our subject, let us briefly touch upon a few generalities of importance.

To the patient, all ailments referred to or arising in the region of the rectum are " piles." Various members of the human race have been afflicted with such conditions from the remotest antiquity, as the Bible and Egyptian writings show. It seems quite natural, therefore, that the laity should use the term in a rather generic sense to designate disease of the anorectal region.

As natural and pardonable, however, as it is that the laity should fall into the obvious error of considering all rectal trouble as being due to "piles," yet it is quite as deplorable that so many physicians should have so far forgotten their medical knowledge as to assume the same attitude. What one of us has not seen cases of pruritus ani, of fissure, of polyp, or even of cancer which had been diagnosed by the attending physician as hemorrhoids!

In the latter instances investigation will often reveal the fact that the doctor never even examined the patient. Little wonder then at the error in diagnosis! And yet for the want of just such an examination the physician does his patient the gross injustice of treating cancer of the rectum with suppositories or salves—wasting those precious moments when an early diagnosis would afford the patient the best possible chance of recovery. More selfishly considered, it must be apparent that this physician will most certainly not gain in popular favor when the inevitable truth is known.

ORDER OF DISCUSSION

In consideration, therefore, of the looseness with which the term " hemorrhoid " is used, it will add much to the clarity of our discourse to make a most plain statement of what hemorrhoids are and an equally plain statement of what they are not.

We can arrive at a conclusion of the precise nature of hemorrhoids only after a study of their structure and their mode of production. In the course of that study we will become aware of the fact that anatomical situation, duration of and the conditions to which hemorrhoids have been subjected lead to a differentiation into varieties dependent upon the factors named. Recognition of the fundamental similarities of all varieties of hemorrhoids makes their diagnosis apparent, and the differences existing between hemorrhoids and conditions apparently allied renders differential diagnosis possible.

The condition itself, as well as whatever complications may arise therefrom, are the source of discomfort, for which symptoms the patient presents himself for relief—and viewed from the physician's standpoint, they are the basis of his problem in therapeutics. It must be obvious that the very existence of more than one variety of the condition renders futile the hope of one effective cure for all hemorrhoids. The lack of correlation in modern medical thought on what is suitable in the treatment of hemorrhoids leaves the general practitioner at a loss as to the relative value of current methods.

The following data and suggestions are therefore offered with the faith that they will be found safe guides to rational and successful treatment of hemorrhoids.

CHAPTER II

DEFINITION AND SYNONYMS

When embarking upon a discourse which has for its motive the elucidation of the subject of hemorrhoids, a plain statement of just exactly what hemorrhoids are seems to be a most logical point of departure. This is, indeed, urgent when, as previously stated, such latitude of opinion exists among physicians that even they are prone to designate every variety of rectal ailment, from a mild pruritus to a severe prolapse, by the term "hemorrhoids."

One cannot arrive at a very definite conclusion as to the intrinsic nature of an object until it has a definite name or term applied to it. Hence, while the subject of hemorrhoids is encumbered by such vague terms as "varicose new growth" or "hemorrhoidal tumor," or "varicose tumor of rectum," there will be consequent confusion of opinion as to the nature of these.

The following definition is offered as a concise statement of the nature, construction, and characteristics of hemorrhoids.

Definition.—The term hemorrhoid is used to denote a condition of progressive varicosity affecting one or more radicles of the hemorrhoidal veins, and tending towards mild interstitial inflammation, fibrosis, and spontaneous cure, but which may be complicated by thrombosis, infection, ulceration.

Bluntly speaking, hemorrhoids are primarily a disease of the veins associated with the rectum and anus. The tissues immediately overlying and those subjacent to these veins are affected secondarily. The nature of the disease affecting these veins is degenerative, the process starting in dilatation of the veins and ending in extreme varicosity, or in lieu thereof, in thrombosis or in rupture of the vein wall. Because of the peculiar circumstances attendant upon the anatomical location of these veins, disease of this nature when affecting them has come to assume a far greater importance, particularly in severity of symptoms, than a similar vein disease elsewhere, and the special name of *hemorrhoids* has been assigned to the condition. It must be recognized, however, that fundamentally the condition is absolutely identical with the process of varicosity elsewhere throughout the venous system of the body.

We may therefore conclude that a hemorrhoid is a varicose hemorrhoidal vein. There is nothing in the condition to distinguish it from a varicose vein elsewhere other than its location and the circumstances attendant upon that location; namely, an extreme liabilty to traumatism by fecal masses, to infection by the bacteria resident in the feces, and to congestion induced by any circumstance that raises intra-abdominal pressure.

SYNONYMS.—Hemorrhoids are variably known in accordance with the equally varied opinion of what constitutes a hemorrhoid. Thus we hear of a condition known as " itching piles " or " burning piles," which condition in reality is not piles at all and in the majority of cases is not even associated with piles. The condition correctly termed is " anal pruritus." Incidentally, the term " piles " is the popular term among the laity and is used to some extent among the profession. Somehow, it has of late fallen into disfavor as being unfit for polite use, yet from the standpoint of the terminology of the two terms, that is, " hemorrhoids " and " piles," the latter is, in reality, far superior. The word " hemorrhoid " is derived from the Greek (haima—blood) plus (rhoos—flow) and the word " pile " is derived from the Latin (pila—a ball). Inasmuch as all hemorrhoids do not bleed but *all* are associated with at least some swelling, it may readily be seen that the latter is the more descriptive of the two terms. Cooke has very well said, " The derivation of the word (hemorrhoids) indicates that it was originally applied because of an inconstant, though, when present, conspicuous symptom. And gradually, without regard to the pathology involved, or rather in ignorance of it, this symptom of hemorrhage came to signify the disease itself. The term is an unfortunate one and in the past has been the cause of much confusion, references to hemorrhoids of the nose, mouth, uterus, etc., being not at all infrequent." At the present time, by common consent, its use is restricted to the rectal condition and, in spite of etymological defects, it would be both difficult and unwise to displace it. However, to lay aside at one stroke all petty quibbling as to the origin of the term " hemorrhoid " or " pile," it may be said that the terms are synonymous and have come to mean a varicose vein situated in the lower rectum or at the anal margin or anorectal junction. Embellish this blunt statement as you may, the fact remains that the structure in question is fundamentally a varicose vein, whose only claim to distinction lies in its anatomical situation and the symptoms incidental thereto. The practical significance of this must be apparent.

External hemorrhoids are sometimes called "cutaneous hemorrhoids." " Skin tabs " or " fleshy piles " are not piles at all, but are either merely redundancies of the perianal skin induced at some previous time by an external thrombotic hemorrhoid which became absorbed, or else are the remnants of fibrosed external hemorrhoids. The same may be said of " connective tissue hemorrhoids." In these latter cases the external hemorrhoid has undergone spontaneous resolution following thrombosis. The connective tissue remaining as a result of sclerosis gives form to the redundant skin. Thrombotic external hemorrhoids are occasionally referred to by the laity as " hard piles." When a patient complains of " sticking piles " it is well to suspect that his true condition is not hemorrhoids but, in truth, fissure in ano.

When the presence of hemorrhoids leads to the hypersecretion of mucus, as not infrequently happens, the condition is sometimes termed " weeping piles," particularly by the laity.

Hemorrhoids are also called " bleeding piles " when associated with bleeding or " blind piles " when there is no bleeding, as in the case of external piles. The thrombotic form of external piles is sometimes called "blue piles " in contradistinction to the prolapsed internal hemorrhoid which is called " red piles." The latter variety are also known as " fallen " or " protruding piles." The foregoing terms are colloquial expressions among the laity, though occasionally we find a physician using the same nomenclature. The use of definite anatomical terms is, of course, much preferred to the loose terms just mentioned. It is also suggested that external hemorrhoids be called such and not " dilated perianal veins." The latter term is frequently employed, but our classification gains in logic if we adhere to the exact terms of external and internal hemorrhoids rather than give a descriptive phrase to one condition and a name to the other. For if these veins are abnormally dilated, they then fit in with the condition which has come to be termed as a hemorrhoidal condition. If we are going to use descriptive phrases in the place of names, we might just as well call proctitis " inflamed rectal mucosa " or pruritus " itching perianal skin." It seems equally absurd to use the phrase " dilated perianal veins," instead of the term " hemorrhoids," which has come, through constant usage, to be the word symbol for the condition described.

It may be noted that the foregoing definition takes no cognizance whatever of two conditions sometimes classified or termed "hemorrhoids." These are the so-called capillary hemorrhoid and the arterial hemorrhoid. Both of these are misnomers for which no substantial reason can or has ever been advanced. Considered from the standpoint of their pathology, they most certainly are not hemorrhoids in the sense of being structures containing varicose veins. In its final analysis, the pathology of a clinical condition is the standard by which it must be judged—not appearances. Considered from the standpoint of symptoms, neither of these two structures are hemorrhoids any more than many other structures which are swellings and which bleed occasionally. When, however, we judge them by the standard of their histological components, it becomes immediately apparent that neither are true hemorrhoids.

A capillary hemorrhoid consists in a nævoid mass of tissue, *i.e.,* telangiectatic capillaries with a very small proportion of supporting connective tissue stroma.

An arterial hemorrhoid consists in a relatively large amount of fibrous connective tissue stroma in which is imbedded an artery of large or moderate size. It is invariably the result of a self-cured hemorrhoid, *i.e.*, one in which the fibrous stroma has proliferated to such an extent that the original varicose vein has spontaneously occluded and become fibrosed.

CHAPTER III

THE SIGNS AND SYMPTOMS OF HEMORRHOIDS

PATIENTS affected with hemorrhoids usually present themselves for medical advice complaining of one of four chief symptoms: itching about the anus, bleeding upon defecation, protrusion of the hemorrhoids, or pain. Hemorrhoids give evidence of their presence, moreover, by various other symptoms which are dependent upon its variety, the anatomical position of the varicosity, its extent, its recency or chronicity, and finally upon certain disturbing factors of which the character of the stool is the most important.

More influential, however, in the nature and extent of the patient's symptoms than any of the foregoing is the temperament of the patient. Should the patient be plethoric in disposition, a striking contrast may be noted between the pathological changes found and the complaints made. Thus we see patients who boast of a mass of prolapsed hemorrhoids as large as a small orange and yet they walk in quite unconcerned and merely say that their "hemorrhoids are down again." Frequently in cases of ulcerated hemorrhoids we expect considerable complaint, but often nothing much is complained of. Conversely, in a person of the hypersensitive type we find perhaps one small prolapsed hemorrhoid and hear tearful descriptions of the agony experienced, distress which at times entirely unfits them for their daily duties. Symptoms, therefore, are guides to the existence of hemorrhoids whose value is, at best, relative. This forces us to the conclusion that signs, rather than symptoms, are to be relied upon in arriving at a diagnosis.

Signs and Symptoms of External Hemorrhoids

Simple external hemorrhoids may be present for a long time without giving rise to any symptoms other than a sense of fulness at the anal margin. More often, however, they induce severe anal pruritus, and the skin covering them becomes the recipient of much mechanical insult in the form of rubbing and scratching. It is this association of the symptom of pruritus with *some* cases of hemorrhoids that has given rise to the common expression, " itching piles." After excoriation has occurred as a result of scratching, a severe burning sensation often takes the place of the itching. This is occasioned by perspiration or other irritating substances getting into the fissures of the abraded skin.

External hemorrhoids do not bleed, which fact is in direct contrast to the internal variety and may be accounted for by the relatively greater protection afforded by the comparatively strong skin in contrast to that furnished by the thin mucosa.

The appearance presented by simple external hemorrhoids is as follows: Tortuous blue vessels are to be seen immediately subjacent to the skin, around the anus, while in others they are arranged in a radial network for a distance of from two to four centimeters around the anus. In either case the skin itself is not changed. In slight cases it is manifested by barely visible and palpable bluish swellings around the anus. In more severe cases there results the formation of nodular swellings, bluish in color and varying in size. When itching is a prominent symptom the typical skin changes of pruritus occur in the overlying integument but the varicose vein itself remains relatively unchanged.

External hemorrhoids may be transformed from a simple condition of varicosity to a more complicated one by the occurrence of the various processes of inflammation, ulceration, thrombosis, or rupture.

INFLAMED EXTERNAL HEMORRHOIDS

When the complication consists of inflammation the skin and areolar tissue immediately about the varicose perianal vein become swollen and stretched, due to edema, and are very tender to touch. (Fig. 1.) At times the skin over a swollen external hemorrhoid is distinctly flushed, owing to capillary injection. At other times, it is merely slightly thickened and of a pale gray color. Frequently, sphincteric spasm is induced and this contributes largely to the patient's discomfort. Particularly annoying is this spasm of sphincter when sleep is attempted.

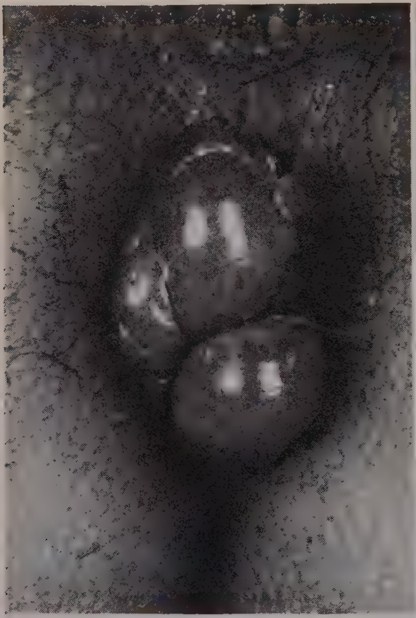


FIG. 1.—Inflamed external hemorrhoids. Edematous, swollen and inflamed masses at the anal margin covered by skin.

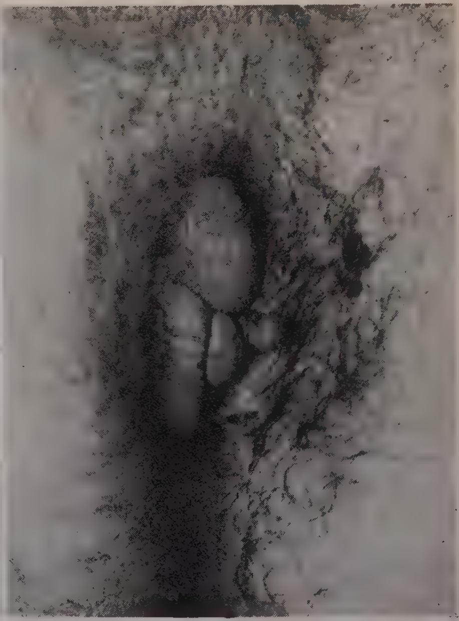


FIG. 2.—"Skin tags." Redundant folds of anal skin often mistaken for external hemorrhoids.

Just when the patient is dozing into slumber, a sudden contraction of the sphincter occurs and the acute pain that follows brings a rude awakening. Tenesmus is often present and involuntary straining adds to the pain and soreness. The condition and each symptom in its details is, of course, greatly aggravated by walking, bending, lifting, or any act, such as sneezing or coughing, which increases intra-abdominal pressure and hence pressure on the pelvic floor. Defecation is, of course, very painful and is followed by a soreness which lasts sometimes for an hour or more. Because of this, constipation of a rectal type is often induced. Should the attack subside, there is a gradual absorption of inflammatory exudate and with the exception of the skin, which henceforth, because of its overstretching, remains as a redundant fold to be known as a " skin tag " (Fig. 2), all the tissues return to a condition approximately normal. The condition is, however, liable to a progression of complication by thrombosis occurring within the varicosities affected.

Thrombotic External Hemorrhoids.—In the event of thrombosis occurring in the varicosity, which is relatively infrequent, or in the event of the partial rupture of the vein wall, which is more common, a hematoma forms and may be seen as a bluish oval mass directly under the skin in the perianal region. (Fig. 3.) The size of this mass is, of course, directly dependent upon the extent of thrombosis or the amount of extravasation which has occurred. Thus it varies from one centimetre to three centimetres in diameter. The extravasated blood promptly clots, giving the mass its hard, smooth character. It occurs most frequently in the lateral region, probably on account of the relatively greater support given in the anterior and posterior regions by the ano-coccygeal raphe posteriorly and the perineal body or central point of the perineum anteriorly. The thrombus feels hard and smooth and it is freely movable under the skin.

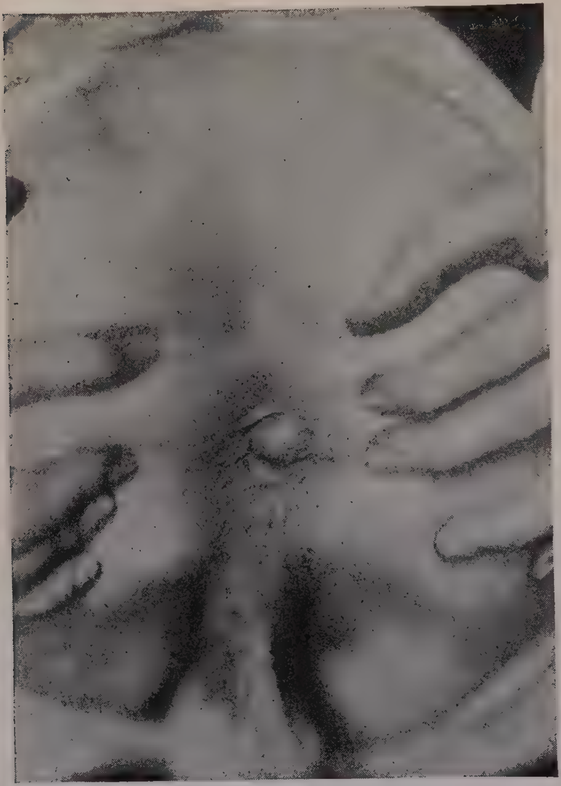


FIG. 3.—Thrombotic external hemorrhoid. Bluish, oval mass at the anal margin covered by skin.

The condition gives rise to pain, invariably sudden in its onset, and is usually of a sharp, stinging character. It usually occurs during straining at stool, while lifting a heavy weight, when coughing or when sneezing. There is a feeling of " something giving way " in the anal region, and a painful swelling very soon thereafter appears at the anal margin. During the first few days of its existence the pain is persistently intense and the swelling is very tender to touch. This tenderness renders the patient unable to sit in comfort and makes defecation a distressingly painful procedure. Reflex spasms of the sphincters and levator ani caused by these symptoms induce further pain and a constipation of the rectal type. Should resolution occur and the clot be absorbed, the pain and other symptoms diminish in intensity, ultimately to disappear unless the condition becomes complicated. The thrombus feels hard and smooth and is covered with tense, glistening skin under which, however, it is fairly movable. The extravasated blood is partially visible through the skin and gives the swelling its characteristic purplish-blue color. Later, when partial absorption has occurred, the skin becomes loose or redundant and regains its normal color, while the clot, though smaller, still retains some of its hard, smooth character, and feels like a shot or pebble under the skin.

In the event of external hemorrhoids being further complicated, as they may be, either by rupture of the overlying skin, ulceration of the overlying skin, or finally by abscess formation in the clot, other symptoms develop.

In the event of rupture of the skin overlying the clot, spontaneous evacuation of the clot may occur, with total relief of symptoms and occasionally followed by spontaneous cure. The patient may refer to this as " open " piles. Usually the area becomes infected and may lead to the formation of either an anal ulcer or a blind external fistula.

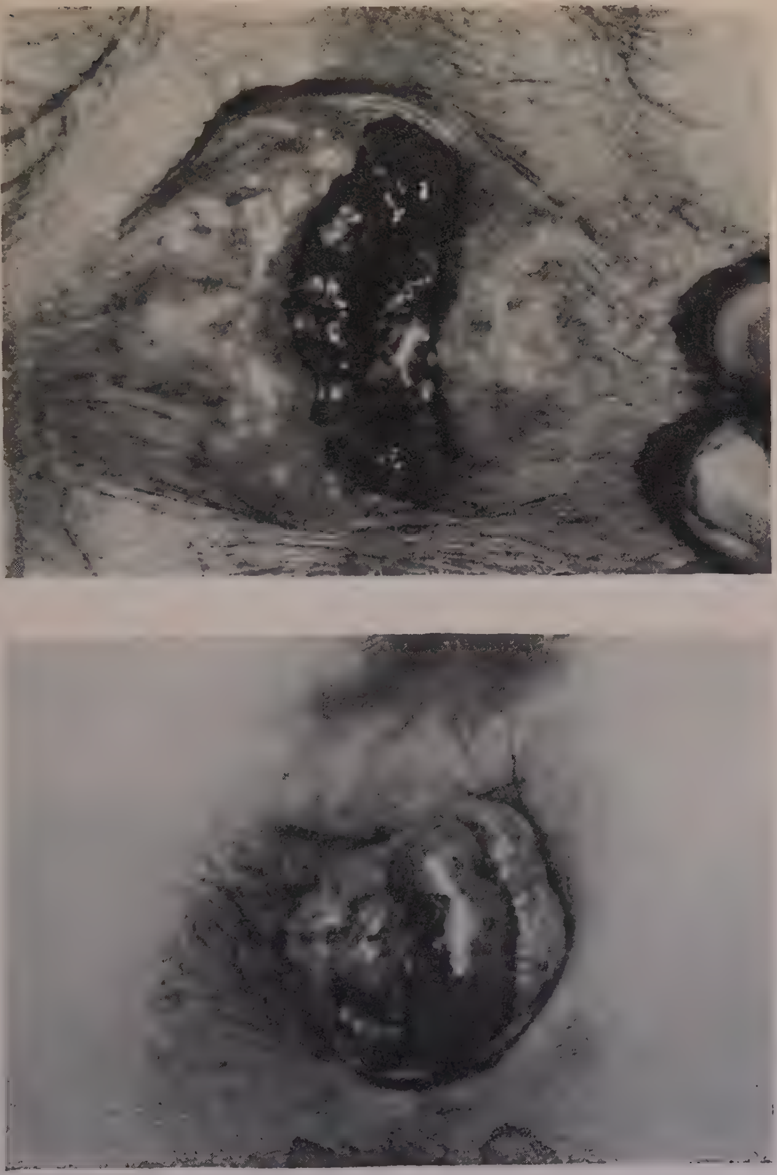
More frequently, however, the overlying skin becomes ulcerated, giving rise to considerable soreness, local heat, and perianal edema. If ulceration proceeds sufficiently the clot may deliver itself through the ulcer opening, which is then liable to the same sequelæ as mentioned in the previous paragraph.

Where the skin, however, remains intact, infection of the extravasated blood and surrounding tissues often occurs. This is not to be particularly wondered at in view of the abundance of micro-organisms in the anal canal and on the perianal skin. As infection proceeds, suppuration usually supervenes, with the result that a marginal abscess develops at the site of the clot. The purulent matter in the abscess burrows in an attempt to evacuate, and should this occur, either a blind external fistula results with the opening on the perianal skin or else the pus burrows under the superficial part of the external sphincter to evacuate in the anal canal, forming a blind internal fistula. In some cases it evacuates in both places and leaves a complete fistula in ano. During the progress of such a process all the symptoms of a marginal abscess are experienced, namely, throbbing pain at the perianal region, tenderness of the surrounding tissues, local heat and redness of the surrounding skin, and in some cases edematous swelling of the perianal skin about this area. In its later stages, the thrombotic hemorrhoid becomes softer and fluctuation may be detected near the centre of the mass.

Signs and Symptoms of Internal Hemorrhoids

Simple internal hemorrhoids may exist for a variable length of time without their existence being known by the patient, but usually they give rise to symptoms much earlier in their career than do external hemorrhoids. This is to be explained by the fact that they are more liable to injury or irritation since they encroach upon the lumen of the anal canal and lower rectal cavity and thus come under the direct action of the fecal mass. The latter, in response to increased intra-abdominal pressure, forces downward, pushing aside and tending to drag the hemorrhoid downward. Such traumatism increases the laxity of the hemorrhoidal venule attachment to submucosa and leads to a progression of symptoms.

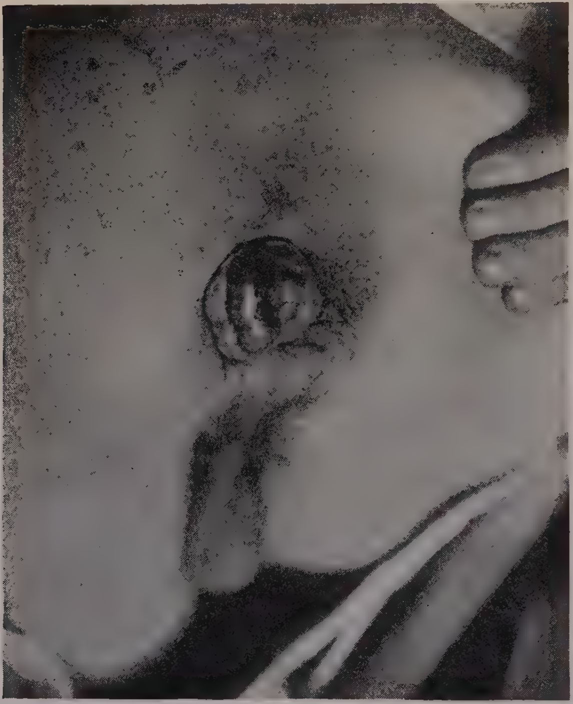
That infection should occur in a tissue so traumatized by erosions is not surprising when we consider the prolific bacterial flora present in even the normal rectum. Ulceration of the mucosa overlying the hemorrhoids therefore occurs in some cases. Owing to the vascularity of the parts and the relatively low virulence of the organisms the average individual, by virtue of immune resistance, escapes this.


4-A

4-B

Fig. 4.—Protruding internal hemorrhoids. Round, berry-like masses protruding through the anal orifice. They are covered by mucosa.

Appearance.—When viewed through a proctoscope simple internal hemorrhoids are to be seen as broad sacculated swellings in the rectal mucosa which protrude into the lumen of the lower rectum and anal canal. When the patient bears down or rises upon his hands from the knee-chest position, these sacculated swellings tend to prolapse into the lumen of the proctoscope. The mucosa covering them is usually of a turgid red color and frequently shows erosions; not infrequently blood may be seen oozing from these. Occasionally small areas of mucosa covering the hemorrhoids show superficial ulceration.



(Courtesy of Collier F. Martin.)

Fig. 5.—Internal hemorrhoids protruding through the anal orifice. Note demarcation between mucosa and skin.

When prolapsed, the hemorrhoids appear as round berry-like masses protruding through the anal orifice. (Figs. 4 and 5.) Depending upon the state of their circulation, they are either bright red or livid bluish red in color.

When internal hemorrhoids are thrombosed, they feel and look like broad, firm, cord-like eminences under the rectal mucosa. The latter is a very dark-red color.

When strangulated, a hemorrhoid has the peculiar purple-red color seen in strangulated tissue elsewhere.

When gangrenous, the hemorrhoidal tissue turns black and a yellow-white slough appears on its surface.

Anal Itching.—The association of itching with piles or hemorrhoids is the basis for the very prevalent opinion that pruritus ani is due to piles. In some cases this opinion is founded on fact and in many other instances it is based on a fallacy. That itching does occur in a certain percentage of hemorrhoids is conceded; that perianal itching is not always indicative of hemorrhoids should be borne in mind. As I have pointed out at length in various experimental researches on the symptom of itching in particular reference to pruritus ani described in my book, " Pruritus of the Perineum," and in current medical literature, itching must be regarded as an early symptom of pathological changes. Thus it is often the very first symptom of hemorrhoids, as has been noted by others. My interpretation of its significance in the case of hemorrhoids is that it is the early warning symptom of progressive dilatation and varicosity of the hemorrhoidal veins, a progressive condition which brings us through what might arbitrarily be called the three clinical stages of hemorrhoids, namely, prominence of the hemorrhoid, partial prolapse and, finally, complete prolapse of the varicosed hemorrhoidal vessels. This process is an abnormal one. It causes a stream of afferent impulses to be sent to the central nervous system. Here the sensation of itching is aroused and in the attempt to refer it, a misreference occurs because sensory function is so much more highly developed in reference to the skin than the mucosa. In this manner anal itching occurs. Itching occurring later, when irreducibly prolapsed hemorrhoids exist, is due to dermal irritation resulting from escaped mucus.

INCREASED DIFFICULTY OF DEFECATION is an early symptom and leads to straining. The latter, by increasing pelvic venous pressure, distends the hemorrhoids still more.

Constant traumatism eventually erodes the mucosa overlying the vein to such an extent that the vein wall gives away and hemorrhage results. The blood is comparatively bright red in color and generally in large enough quantities as to be evident macroscopically.

BLEEDING FROM THE RECTUM is a very frequent symptom of hemorrhoids in their early stages of development. However, this may be absent and even in the later stages hemorrhage may be of a widely intermittent and irregular type. The blood is usually bright red, although if it remains very long in the rectum it may become dark and clotted. The bleeding from the rectum in cases of hemorrhoids may be so slight as to attract no attention or it may be so copious as to lead the patient to state that he " filled the bowl " with blood. Between these two extremes, there are, of course, many degrees. Certain it is, however, that sooner or later all cases of hemorrhoids bleed to some extent or other. If it is slight and particularly if the blood be mixed with fecal matter, it may not be noticed, at least not as blood. In such cases, however, the patient may state that his stools occasionally are of a peculiar dark color, like tar. The color in many instances is due to the changed blood which has lain in the rectal ampulla for some time and has become incorporated in the fecal mass. If any considerable amount of blood collects in the ampulla, it may induce a desire to evacuate. The evacuation, of course, in this instance, will be largely clotted blood.

Profuse bleeding is by no means the rule, however. Extensive bleeding of this type usually occurs in old ulcerated cases. At times it is very severe. I know of one instance where the patient, a man, continually wore a perianal pad to absorb blood oozing from the anus.

ANEMIA is a symptom which is too often either entirely overlooked or taken for granted, yet in my opinion it is by far the most important symptom accompanying this condition, since it is the chief result of hemorrhoids. Bleeding from hemorrhoids may be of such a slow oozing type that it goes by unnoticed for a long time. Blood becomes mingled with fecal matter to such an extent that it merely discolors the matter and cannot be recognized readily in the stool. Nevertheless, this condition represents a real loss of blood and the constant drain upon the blood system results in a secondary anemia. In other instances where the bleeding is more free, blood is distinctly seen in the stool, and in such instances the anemia is produced more quickly. In many instances, hemorrhage is quite copious, indeed many of us have seen cases which have been practically exsanguinated by just such copious hemorrhage. There can be no doubt, therefore, as to the far-reaching effects of the blood loss entailed by the hemorrhage incident to hemorrhoids.

The extent of blood loss in the ordinary cases of hemorrhoids and its cumulative effect upon the total blood volume are not, I believe, very well appreciated as yet by the average practitioner. That anemia of a severe secondary type may occur as a result of a prolonged bleeding from hemorrhoids is a fact deserving of recognition. By actual blood-count and hemoglobin tests, I have found that the average case of internal hemorrhoids rarely has a hemoglobin count above 70 per cent. nor a red-cell count above four million. There are many cases in which almost complete exsanguination may occur. Those of us who see large numbers of these cases are, of course, aware of the possibility. But not infrequently we meet with cases which have been diagnosed for a variable length of time as one of the primary anemias, such as pernicious anemia or chlorosis. I have known several cases of this type in which the possibility of the existence of hemorrhoids was not even suspected, nor was a rectal examination ever suggested. Saphir, in an article, reports a case of this character, and similar cases in my own practice confirm the observation. Indeed I recall several cases where anemia was so pronounced that I insisted upon transfusion before attempting hemorrhoidectomy.

The occurrence of bleeding, therefore, should not be regarded as a trivial matter because its influence in lowering the patient's resistance and vitality are very marked. This view is contrary, of course, to a belief held in some quarters, particularly among the laity, that such bleeding is beneficial.

Abdominal Cramps often occur coincidentally with hemorrhage from the hemorrhoids and should immediately direct one's attention to the possibility of concealed bleeding; that is, bleeding from internal hemorrhoids which continues unnoticed for some time because a hypertonic sphincter retains the blood in the rectal ampulla.

Prolapse of the Hemorrhoids.—In instances where internal hemorrhoids have existed for a long time, or in a case where the tone of the sphincter ani is decreased, or in the event of a general weakness of the tissues, *protrusion* of the hemorrhoid occurs and causes pain either by dragging of the hemorrhoidal mass on the mucosa or by its strangulation by the sphincter. The amount of protrusion varies with each individual and indeed at various times in the same individual. As a rule the protrusion is slight at first and may be seen as a small light-red mulberry-like mass barely protruding from the anal lumen. At this stage they return of their own accord following defecation. Later, however, they may protrude for a distance of three to five centimetres through the anal aperture. Their appearance is distinctive; confluent, soft nodular swellings which protrude through the anal lumen; usually of the turgid red color such as is seen in passive congestion in other mucosæ. Occasionally the surface is eroded and in very late cases in which the hemorrhoid has escaped ulceration, it gives the appearance of a firmer, more polypoid structure, and indeed may approach true polyps in form and structure.

A SENSE OF INCOMPLETE EVACUATION AND TENESMUS, which is a false desire to defecate, often occurs in instances where the hemorrhoids are large enough to lie free on the floor of the rectal ampulla. By pressure upon the tissues at this point the normal stimulation to the defecation centre is simulated and ineffectual efforts at defecation occur. This is often accompanied by severe straining which induces either prolapse of the anal mucous membrane or protrusion of the hemorrhoids through the anal orifice.

EDEMA OF THE SKIN at the anal margin frequently accompanies the first few occurrences of protrusion of the hemorrhoids. This is due to the extravasation of lymph into the newly formed loose space in the areolar tissue about the anus. After protrusion has occurred a few times edema no longer occurs. At times the edema is extensive, and due to a low-grade inflammation of these tissues, the result of infection.

Constipation, though often given as a cause, is in itself very often a symptom of hemorrhoids. The exact mechanism of this consists in a reflex inhibition of peristalsis induced by the irritation at the anorectal area. Once established, it becomes progressively worse and, of course, the hardened fecal masses incident to constipation, by further traumatizing the hemorrhoids, increase the reflex inhibition, and thus a vicious circle is established.

Pain, either in the anus or in the rectum, is not by itself a very prominent symptom in a case of simple internal hemorrhoids. Instead of pain we usually have perianal itching or a sense of anal *soreness* or weight. In the event, however, of a prolapse of the hemorrhoids, a dragging pain occurs, or in the event of thrombosis or ulceration of the hemorrhoids, the pain assumes the character of an intense dull ache. It is chiefly, however, the pain which accompanies thrombosis or strangulation of prolapsed internal hemorrhoids or the pain and distress induced by irreducible prolapse of the hemorrhoids, that leads the patient to seek surgical relief.

Mucus Discharge is often observed to accompany the condition of prolapsing hemorrhoids. The mucus collects around the lower rectum in response to the irritation caused by the hemorrhoid and to oversecretion induced by chronic passive congestion. The escape of this mucus is effected by a partial incompetence of the anal sphincter resulting from the prolapsed hemorrhoid. It often leads to perianal irritation, soreness, and itching.

Sphincteric Spasm is often to be noted in cases in which the hemorrhoids have become inflamed or partially prolapsed and is felt as a perceptible and very unpleasant sense of tightness or tension at the anus. In the event of this spasm occurring while internal hemorrhoids are prolapsed through the anus, strangulation of these may result unless they are soon replaced. The livid blue-red color denotes an interference with circulation in the hemorrhoid. Strangulation if long continued ends in gangrenous sloughing of the hemorrhoid. In this event the tissue becomes a black-red color and a superficial slough of gray-yellow soon makes its appearance.

REFLEX EFFECTS

SUPPRESSION OF URINE, difficulty in urination or increased frequency may result from the reflex effects of inflamed hemorrhoids.

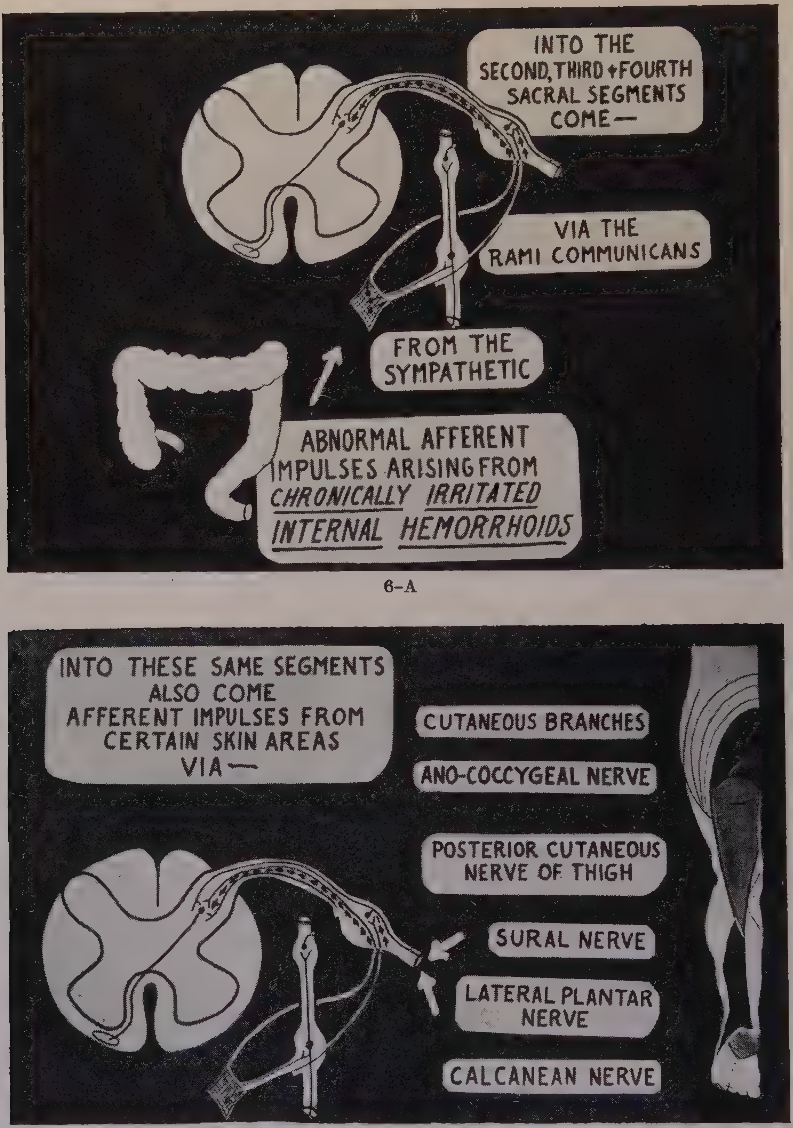
MENSTRUAL DISORDERS may result from reflex action on the ovaries.

NOCTURNAL EMISSIONS occasionally occur as a result of irritation of internal hemorrhoids.

INDIGESTION AND FLATULENCE are often accompanying symptoms in cases of hemorrhoids and are explainable on the same basis as the urinary symptoms, namely, as reflex effects.

MISREFERRED PAINS.—Misreferred pains caused by the anorectal pathology are frequently evidenced clinically by various pains in skin areas supplied by the first four sacral segments. (Fig. 6.)

THUS BACKACHE, either of the lumbar or sacral type, is frequently an associated symptom and is often very persistent and of a dull, dragging nature. It is due to a misreference of the irritation arising in chronically infected hemorrhoids. This symptom often goes by unnoticed by women, who consider such a symptom as a more or less natural condition for their sex.


INTO THE SECOND, THIRD + FOURTH SACRAL SEGMENTS COME—
VIA THE RAMI COMMUNICANS
FROM THE SYMPATHETIC
ABNORMAL AFFERENT IMPULSES ARISING FROM CHRONICALLY IRRITATED INTERNAL HEMORRHOIDS
INTO THESE SAME SEGMENTS ALSO COME AFFERENT IMPULSES FROM CERTAIN SKIN AREAS VIA—
CUTANEOUS BRANCHES
ANO-COCCYGEAL NERVE
POSTERIOR CUTANEOUS NERVE OF THIGH
SURAL NERVE
LATERAL PLANTAR NERVE
CALCANEAN NERVE

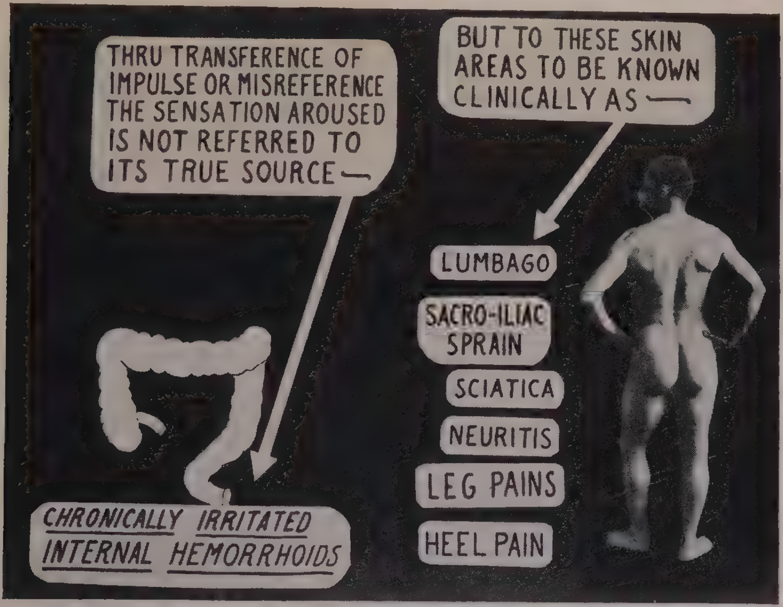
6–A

6-B

Fig 6.—Mechanism by which chronically inflamed hemorrhoids may produce misreferred pains.

Thus, it is not often mentioned voluntarily, but in my experience it has been a most constant symptom.

LEG PAINS of a vague and varying character are often complained of. These are chiefly referred to the back of the thigh or the calves of the legs and are usually described as vague aches accompanied with a sense of weakness and tiredness in the legs. Not infrequently the pain is severe enough to simulate sciatica.


THRU TRANSFERENCE OF IMPULSE OR MISREFERENCE THE SENSATION AROUSED IS NOT REFERRED TO ITS TRUE SOURCE—
BUT TO THESE SKIN AREAS TO BE KNOWN CLINICALLY AS—
LUMBAGO
SACRO-ILIAC SPRAIN
SCIATICA
NEURITIS
LEG PAINS
HEEL PAIN
CHRONICALLY IRRITATED INTERNAL HEMORRHOIDS

6–C

FIG. 6.—Mechanism by which chronically inflamed hemorrhoids may produce misreferred pains.

HEEL PAIN OR FOOT PAIN is occasionally present by virtue of the same mechanism as the above, *i.e.*, by a misreference of painful stimuli arising in the hemorrhoids.

GENERAL NERVOUS IRRITABILITY is marked in cases of long duration and is evidenced by restlessness and a more or less constant sense of fatigue. The continual irritation of prolapsed hemorrhoids sends repeated shocks to the general nervous system and its disturbing influence is great. At times a complete change of disposition is noticed by the patient's friends, and the patient himself experiences unexplainable periods of morbid depression, usually of a melancholic nature. Indeed it is quite remarkable how a condition of such apparent simplicity can exert such a profound effect on disposition and character. In not a few instances these nervous disturbances appear not unlike a true neurosis, though they are, of course, purely secondary to the irritation arising from the hemorrhoids.

The signs and symptoms of hemorrhoids may be briefly summarized as follows:

HEMORRHOIDS
- EXTERNAL
  - Simple—Symptoms; often none other than a sense of fulness and severe anal pruritus. Signs; appear as soft, bluish, nodular swellings about the anus, under the perianal skin.
  - Complicated—
    - (a) *Thrombotic:* Symptoms; sudden sharp stinging pain at anus. Marked anal tenderness. Inability to sit squarely on chair. Signs; appear as a hard, smooth, oval mass immediately under the perianal skin, which is made tense by the swelling. Has a distinctive bluish color. (Fig. 3.)
    - (b) *Ulcerated:* Symptoms; following the above symptoms the part becomes increasingly sore and local swelling increases. There is slight fever. Signs; appearance, skin over the clot shows evidences of superficial ulceration. The skin around the clot is slightly edematous.
    - (c) *Ruptured:* Symptoms; slight soreness of the anus replaces the stinging pain. Tenderness decreases. Signs; appearance, an open wound with irregular edges and in which a partially extruded clot may be seen or the remains of a completely evacuated clot.
    - (d) *Inflamed:* Symptoms; marked sense of fulness and soreness at the anus. Signs; appearance, the external hemorrhoids are markedly edematous and tender to touch. (Fig. 1.)
- INTERNAL
  - Simple—Symptoms; occasionally gives no symptoms. More frequently gives rise to anal itching, tenesmus, and bleeding from the rectum. Later, sense of incomplete evacuation. Signs; appearance, through proctoscope appear as sacculated eminences on the lower rectal wall. Occasional oozing may be seen from small erosions in the mucosa covering them.
  - Complicated—
    - (a) *Prolapsed:* Symptoms; constant aching pain

in rectum increased on defecation. Bleeding from the rectum; perianal edema and itching. Occasionally reflex anuria. Signs: may be seen without the aid of proctoscope, protrude through the anal orifice as spherical red masses apparently lobulated. Soft to the touch and may be reduced through the anus into rectum. Color is usually bright red. (Figs. 4 and 5.)

(b) *Thrombosed:* Symptoms; constant aching pain in rectum. Sense of weight; tenesmus; extreme tenderness. Signs; dark-red cord-like eminences in lower rectal wall covered with dark-red mucosa seen through the proctoscope.

(c) *Inflamed:* Symptoms; marked pain in the rectum and often referred pains to the back and to the legs. Sphincter spastic. Defecation painful. Bleeding from the rectum. Signs; through the proctoscope may be seen three or more sacculated eminences on the lower rectal wall. These are edematous and covered with actively congested mucosa which is bright red and often oozing blood. The hemorrhoids by their combined swelling occupy almost the entire anal canal.

(d) *Ulcerated:* Symptoms; constant aching pain and sense of weight in rectum. Frequently vague referred pains to sacrum, coccyx, and legs. Frequently slight fever; marked nervous symptoms; copious bleeding from the rectum. Signs; through the proctoscope the hemorrhoids are seen as abnormal sacculated prominences on the lower rectal wall covered by a mucosa which shows superficial ulceration and is overlaid by much mucopurulent material. Erosion into the hemorrhoid by the ulcer is quite evident and in some localities an eroded blood-vessel may be seen freely leaking blood. Though most of these blood-vessels are veins, occasionally erosion reaches a small artery, which can be seen spurting blood.

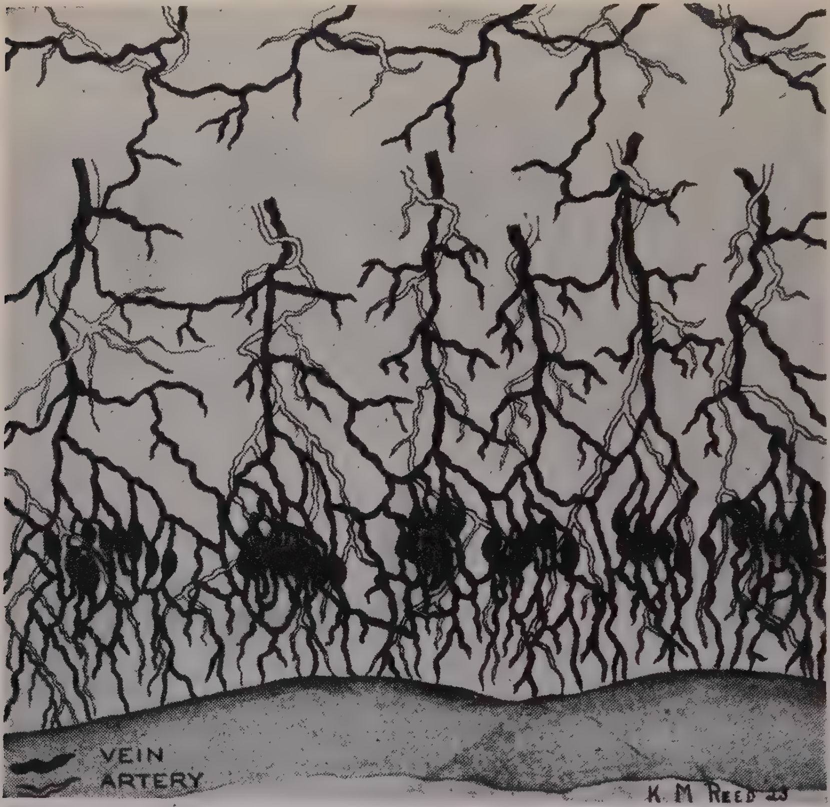
CHAPTER IV

THE PATHOLOGY OF HEMORRHOIDS

ALL varieties of hemorrhoids, while having special detailed changes peculiar to their variety, nevertheless possess certain fundamental features of pathology in common.

To begin with, they all arise from changes in venous structures in a manner closely similar to that occurring in the formation of varicose veins elsewhere. Incidental to a rise in local intravenous blood-pressure there first occurs an abnormal tortuosity of the part of the vein affected. This is accompanied by a certain degree of dilatation which causes the vein to stand out more prominently under the mucosa of the rectum and anal canal than is normal, thereby encroaching upon the lumen of their cavities. This quite naturally leads to traumatism by the mechanical pressure or abrasion caused by fecal masses in their passage through the rectum and anus. Both the dilatation and the traumatism conspire toward a weakening of the vein wall and the result is a physiological attempt at repair by a thickening of the vein wall with fibrous tissue. Sclerosis of this fibrous tissue occurs and limits the elasticity of the vein, thereby preventing further dilatation, but also interfering with the normal elasticity of the vein, so that in time we have a permanently dilated vein which in this locality is called a hemorrhoid, and in which there is a constantly higher pressure than is normal. The process just described is typical of what occurs in each of the minute venule radicles of the affected hemorrhoidal vein. It is a group of such small venous radicles, together with a few accompanying arterioles and some areolar tissue, that goes to make up what we know clinically as a hemorrhoid. This is stated to avoid the impression that each hemorrhoid consists of one large convoluted and dilated hemorrhoidal vein. Simultaneously or a little prior to this stage, however, nature makes an attempt to relieve the abnormal pressure existing there. It does this by utilizing the agency of anastomosis, which happens to be particularly free among veins. In quite the same manner the neighboring veins pass through the same stages until at last three or more are so involved. There are some who have worked out elaborate and fanciful configurations into which hemorrhoids may form; *e.g.*, some claim that a definite ring is formed just at the level of the internal sphincter; others that a ring is formed just above this level. Some find sacculations occurring first in the right anterior or right posterior region; others in the left lateral region. To my mind meditation of this sort is but chasing the shadow for the substance and is on a psychological basis comparable to that shown by children who trace out forms of birds, trees, and castles in the cloud forms of the sky. Those of us who see numerous cases of hemorrhoids take for granted that, in a vast plexus of veins such as the hemorrhoidals, almost any formation may exist. The same may be said of such schematic drawings of " blood pools " or " hemorrhoidal pools " as are shown in Figure 7. For want of an explanation of the practical value of these observations, I cannot recommend them to you for serious consideration.

It must be evident by this time that the encroachment upon the rectal lumen is considerable and that the passage of an unusually large fecal mass must necessarily injure to a very considerable degree the vascular structures lying along its path. The mucosa covering these is, of course, subjected to much traction and becomes loosened from the submucosa. Indeed if traction is great enough, a portion of the submucosa is drawn down with the redundant mucosa and the vein enclosed there-with, so that the hemorrhoidal masses lie more or less constantly in the lumen of the lower rectum. Thus prolapse of the hemorrhoidal masses begins to occur, partly because of the mechanical pressure exerted by the feces and partly by extrusive efforts induced by a sense of tenesmus. The latter is caused in the following manner: Hemorrhoidal masses press upon the sensory nerve-endings of the defecation sense and give rise to a false desire to evacuate, or a feeling of incomplete evacuation. This symptom is known as tenesmus. It leads



(Courtesy of J. P. Tuttle, "Diseases of the Anus, Rectum, and Pelvic Colon," D. Appleton Company, New York.)

FIG. 7.—Drawings from text-book on rectal diseases. "Hemorrhoidal Pools."

to extrusive efforts which result in a further prolapse of the hemorrhoid.

In such a circumstance it becomes increasingly evident that the mucosa covering these hemorrhoids must suffer in time lacerations or abrasions which, in the presence of the highly infective fecal flora, result in ulceration. Thus ulceration proceeds to a point where the vein wall itself becomes involved and eventually results in erosion into the lumen of the vein, thereby giving rise to hemorrhage. Or in lieu of this situation, a direct laceration of the weakened or unprotected vein wall is caused by the passage of a hard fecal mass.

Thrombosis in the hemorrhoidal vessels occurs at times, particularly in the presence of the same factors that predispose to its occurrence in normal vessels. Thus it occurs at places where there is a bend, angulation, or sacculation. These same factors act even more effectually in diseased vessels, such as those present in hemorrhoids, because of the extreme tortuosity, angulation, and sacculation that these vessels in time acquire.

In this manner we can readily trace and easily understand the occurrence and development of the symptoms of hemorrhoids. Thus at first we have swelling, then prolapse of the hemorrhoid, *i.e.,* protrusion, and finally ulceration or hemorrhage, or both. This order is not constant.

It will be noted from the above that the process is primarily vascular. The veins are primarily concerned and play the major rôle in the formation of a hemorrhoid. It therefore becomes necessary to explain the terms arterial hemorrhoid and capillary hemorrhoid, which are met with occasionally in the literature. Neither of these is correct. The first of these is pathologically the remnant of a former hemorrhoid which has undergone partial spontaneous cure by the occurrence of thrombosis or occlusion of the vein and obliteration of its channel. The artery which accompanied the vein, having a thicker wall, still remains functionally active. Thus we have a mass consisting of a fibrous tissue interstitium covered by mucosa and containing an artery imbedded in the stroma. In short, it approaches the structure of a polyp. (Fig. 8.)

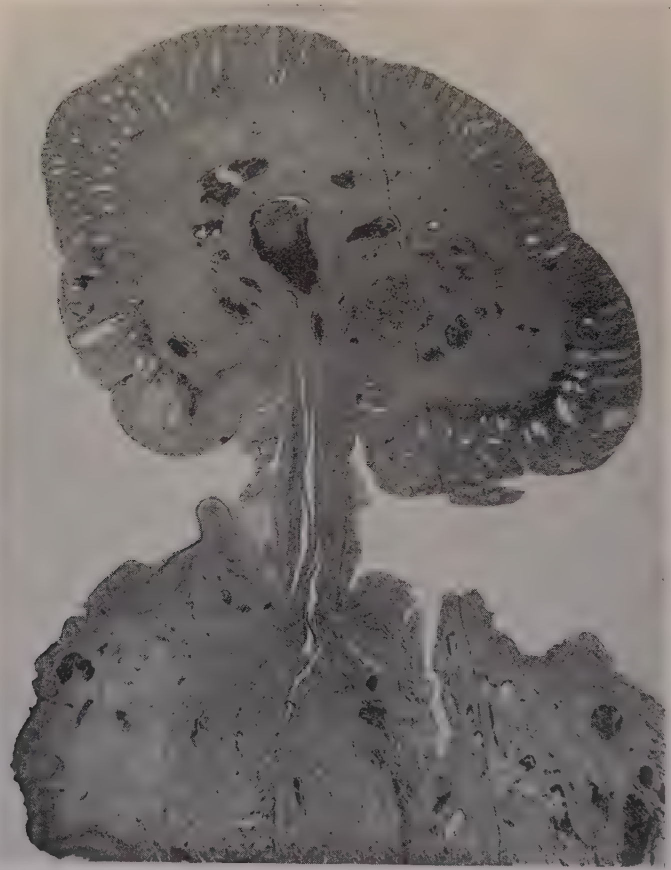


FIG. 8.—Spontaneously cured hemorrhoid. Approaches the structure of a polyp.

A capillary hemorrhoid has even less right to be called a hemorrhoid, inasmuch as pathologically it is angiomatous in nature, being merely a telangiectasis of the mucosal capillaries.

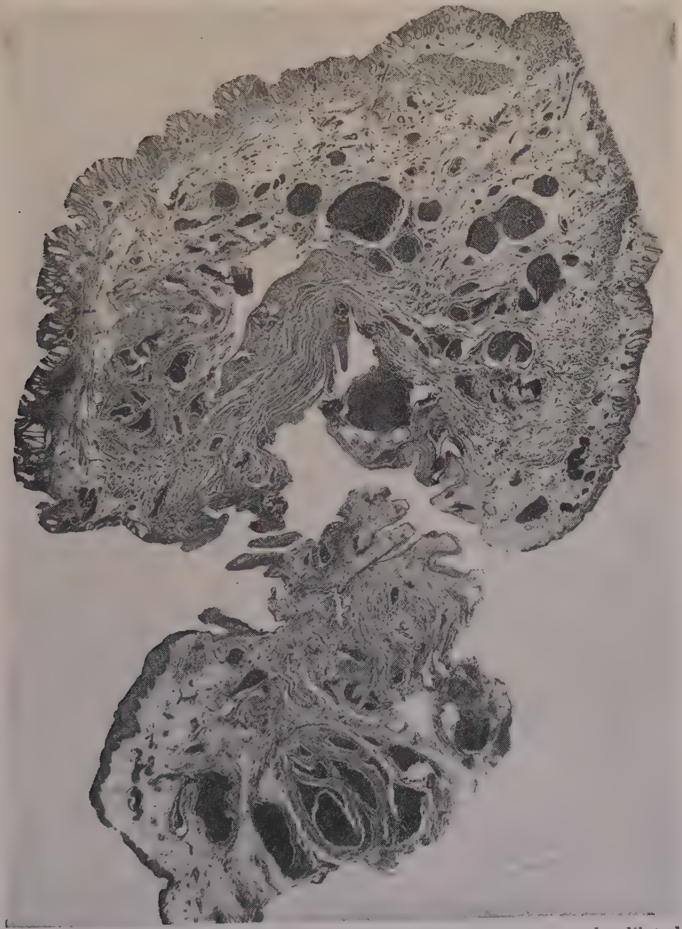


Fig. 9.—Cross-section of internal hemorrhoid. Note the extremely dilated venules supported in a mass of loose areolar tissue.

From the standpoint of treatment the facts mentioned here are of evident importance.

As to the particular tissue changes found in a hemorrhoid, reference must be made to Figures 9, 10, 11, and 12. On cross-section the hemorrhoid is seen to consist primarily of extremely dilated venules supported in a mass of loose areolar tissue. Throughout this loose areolar tissue may be seen an increased number of connective tissue fibres which in the early stages of hemorrhoidal development are seen to be coarser than is normal.

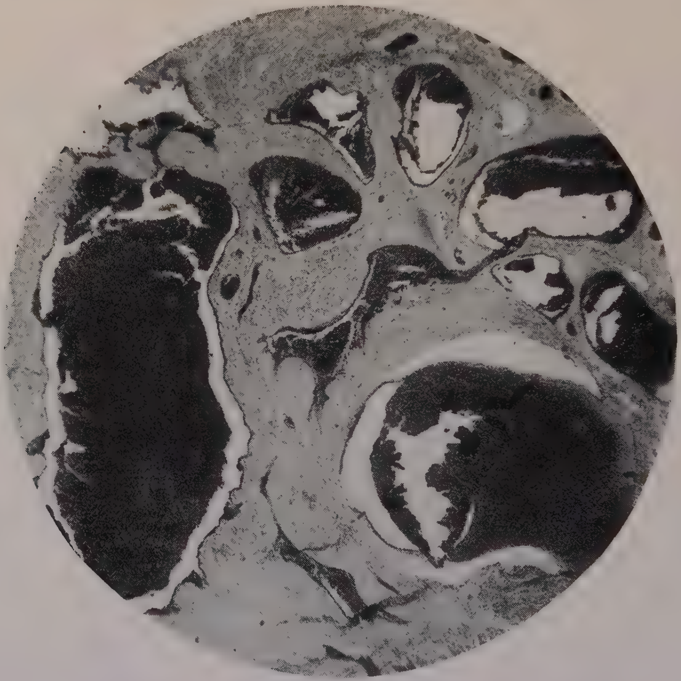


FIG. 10.—Higher magnification of hemorrhoids in cross-section. Note extreme vascularity.

In later stages, the connective tissue changes are more pronounced and the fibres are then thick and dense. Small round cells infiltrate the entire interstitium of the hemorrhoid. At times there may be noted small masses of hemosiderin in the stroma. This is undoubtedly due to the decomposition of blood which at some previous time had escaped from the vessel either by rupture of a small venule or by diapedesis. The arterioles show no changes whatever. The hemorrhoid is covered, in the instance of an internal hemorrhoid, by columnar epithelium; in the instance of an external hemorrhoid by stratified squamous epithelium. At times the mucosa or skin overlying the hemorrhoid shows destructive changes in the nature of erosions or superficial ulceration or thinning. In many the goblet cells or mucin-producing cells in the epithelium show a marked excess of mucin. In the instances where this condition has existed for a certain length of time, bacterial invasion of the underlying stroma is apparent and leads to edema, round-cell infiltration, and further fibrin formation. In short, a chronic productive inflammation ensues.

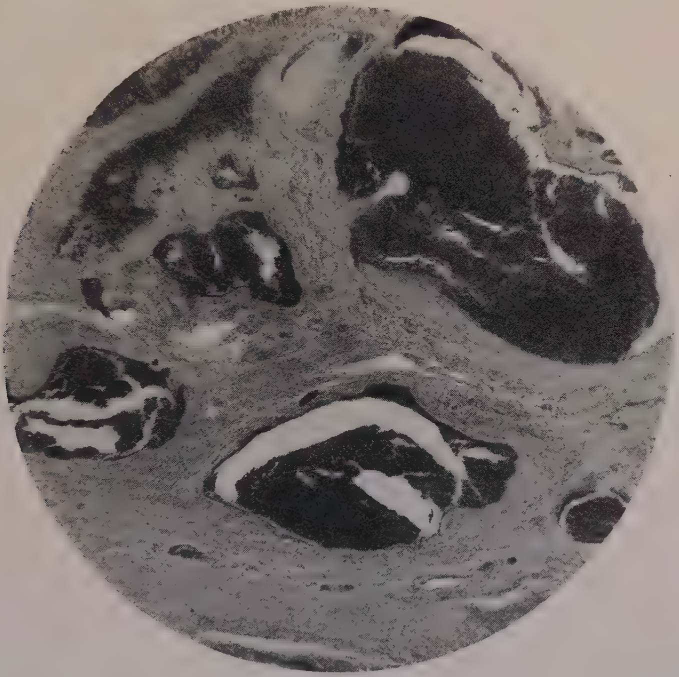


Fig. 11.—Cross-section of a hemorrhoid.

Other than an abnormal accumulation of leucocytes along the sides of the vein and an abnormal amount of blood platelets in the same location, there is but little change to be noted in blood found within the vein lumen (Fig. 13). A closer study, however, of the venules themselves reveals considerable change in the structure of their walls, depending upon the length of

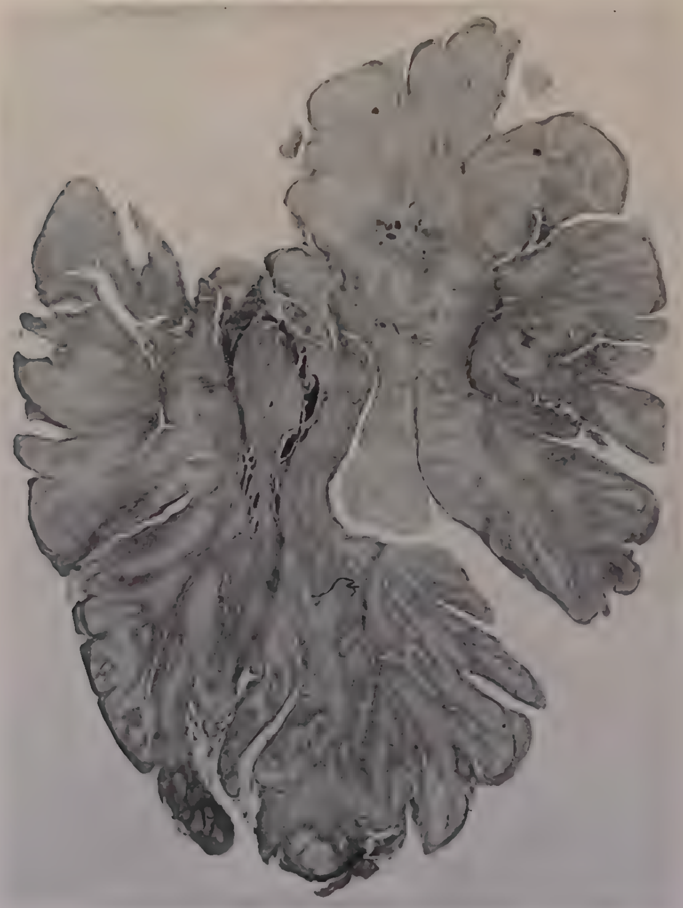


Fig. 12.—Section of a condyloma acuminata. Compare this, a non-vascular structure, with that of hemorrhoids as shown in Fig. 9.

time which the varicosity has been existent. The individual coats of the vein cannot always be seen, but when present, atrophic changes of variable degree will be found. I have never seen hypertrophic changes in any of the three coats of the vein, as is sometimes noted in varicose veins elsewhere. In practically all that I have examined there have been marked atrophy of both the adventitia and the media, with variable degree of replacement of the smooth muscle fibres by connective tissue (Fig. 14). The media may be actually thickened and thus give the appearance of being hypertrophied, but close inspection, particularly of sections stained with the picrofuchsin or Van

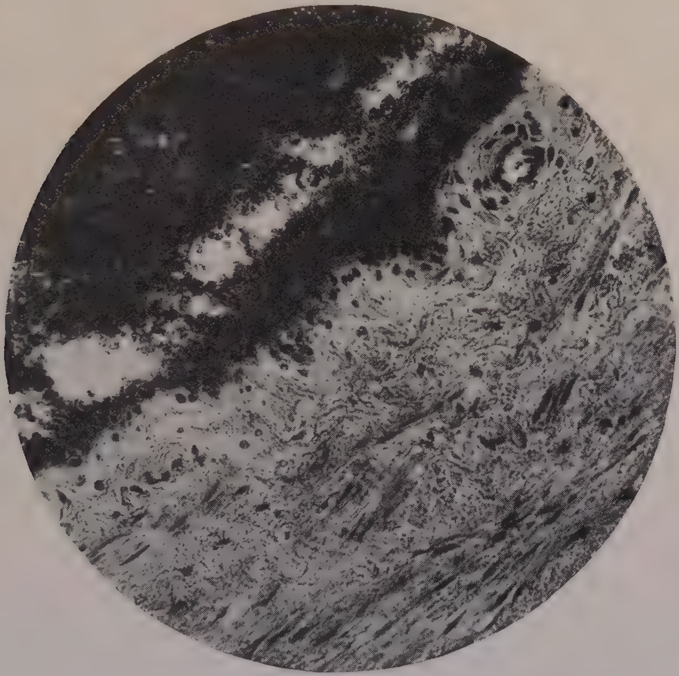


Fig. 13.—Accumulation of leucocytes and platelets along the side of vein. Note the replacement of smooth muscle fibres in the media by connective tissue.

Gieson stains, will reveal the fact that the apparent thickening is in truth a degenerative process in which the smooth muscle fibres have to a varying degree been replaced by connective tissue fibres, and that in many instances these have become hyalinized. Indeed, the amount of smooth muscle fibres is at times reduced to an almost negligible quantity. Similarly, sections stained with Weigert elastic tissue stain will show a marked reduction in the amount of elastic fibres. In cases of long standing, therefore, the vein wall is indeed little more than a connective tissue tubule with an endothelial lining, since elastic fibres are completely absent. This is well shown in Figure 14. The endothelium is in the main unaltered. In the examination

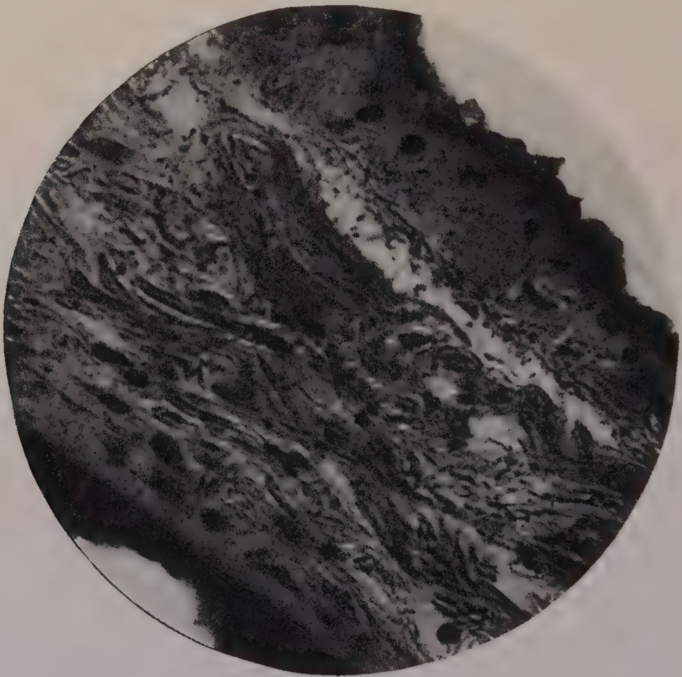


Fig. 14.—High-power view of vein wall. Note the unaltered endothelium and marked connective tissue replacement of smooth muscle.

of many hundreds of hemorrhoids I have never seen any evidence of obliterating endophlebitis. Nor have I ever seen satisfactory evidence of any new growth of blood-vessels, as has been observed by some other investigators.

Areolar tissue in which these veins are supported likewise, because of the productive inflammation hitherto referred to, becomes sclerotic (Figs. 15 and 16). In cases of long standing, the contraction of this sclerosed connective tissue, which often may be seen arranged in crude concentric fashion about the vein, not infrequently leads to an occlusion of the vein. Thus a spontaneous cure of the hemorrhoid results. Often, however, the sclerosis persists, and if the hemorrhoid be of the prolapsed

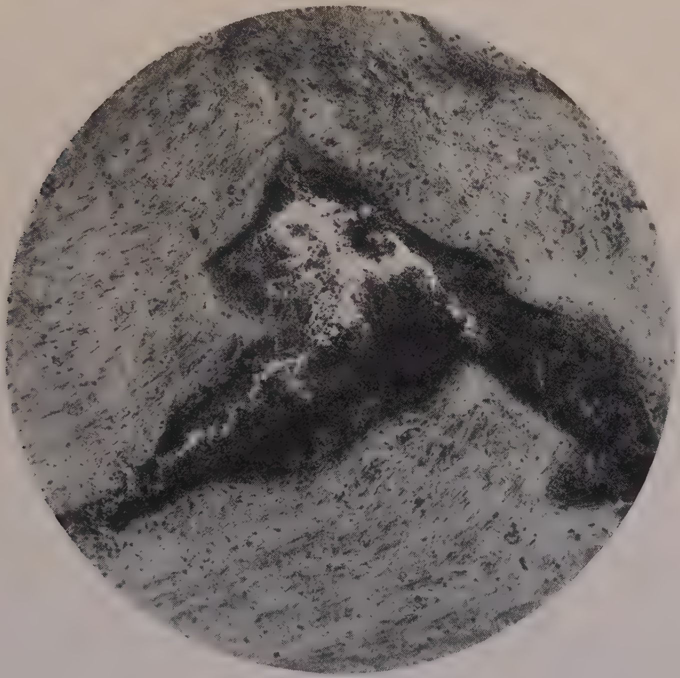


Fig. 15.—Note sclerosis of connective tissue about venule. Also see marked thinning of vein wall.

variety, this progresses until a distinct polypoid mass results, as I have not infrequently observed.

The histological picture presented by a thrombotic hemorrhoid is identical with the foregoing except that in this instance we have the added feature of a mass of clotted blood (Figs. 17 and 18). At times this lies within the vein lumen. More frequently, however, it lies external to the vein lumen. In this instance the vein wall has partially ruptured and the blood is extravasated through the hiatus in the intima and media. It is still covered by the adventitia or external connective tissue covering of the vein. It dissects this covering away from the vein for a slight though variable distance, depending on the size

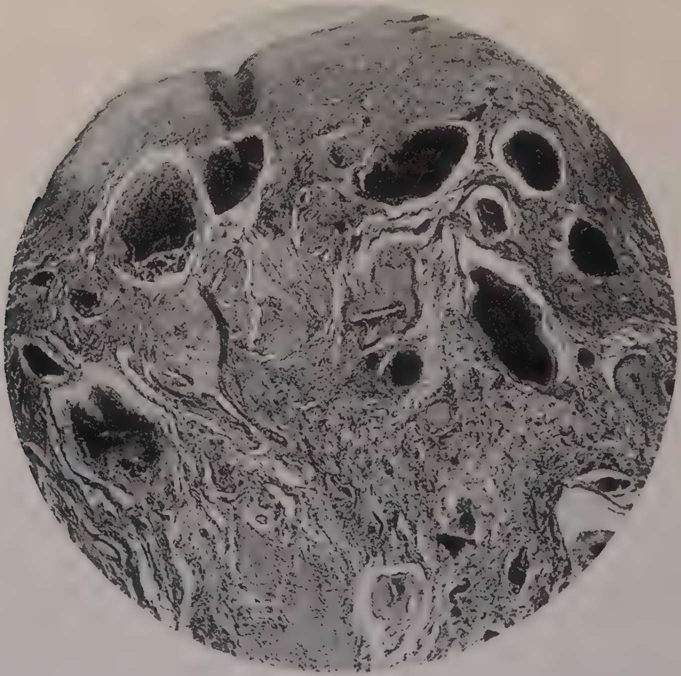


Fig. 16.—Note marked increase in the connective tissue of the interstitium.

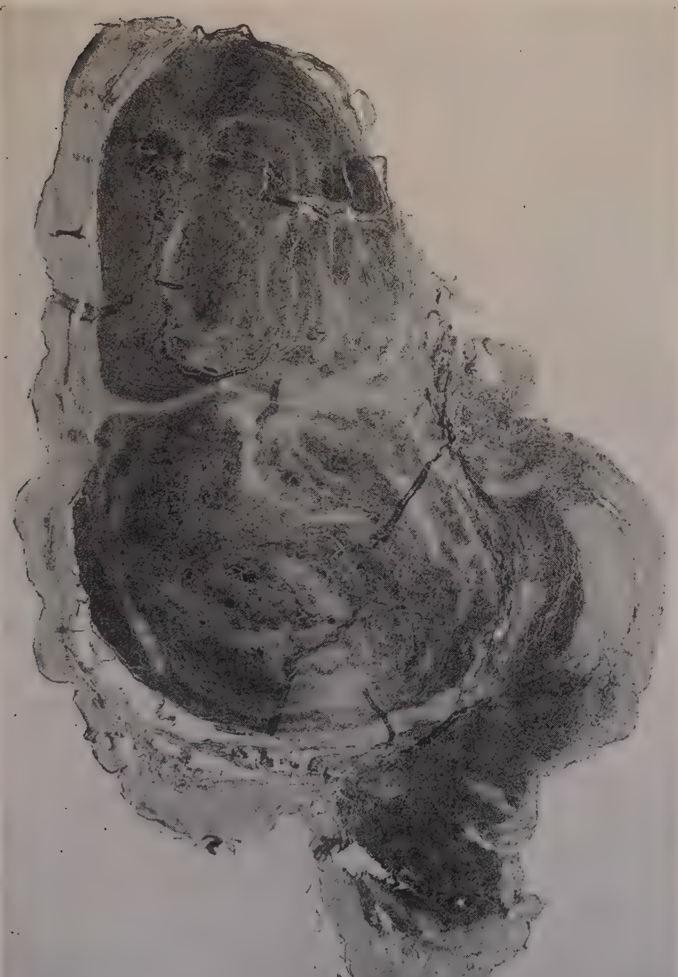


Fig. 17.—Sagittal section of thrombotic external hemorrhoid.

of the clot. Once extravasated, the blood rapidly clots and prevents further extravasation. In the course of time this clot is absorbed and replaced by fibrous tissue. Or else pressure necrosis or infection of the overlying skin or mucosa occurs and allows the clot to deliver itself externally.

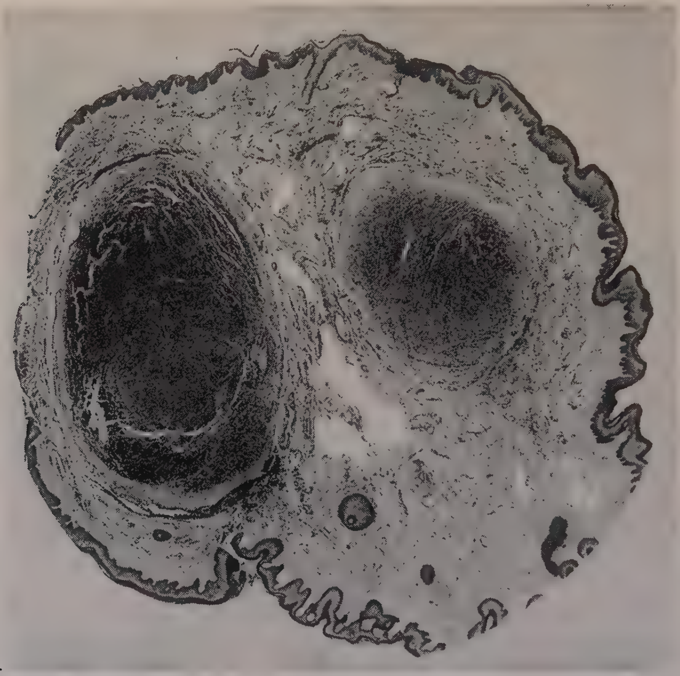


Fig. 18.—Cross-section of thrombotic external hemorrhoid. Note covering of skin.

Pathological examination of hemorrhoids which have been treated by the injection method shows a series of changes somewhat similar to that described on page 41. There is a diffuse round-cell infiltration and some leucocytic infiltration of the interstitial areolar tissue and a marked increase in the connective tissue element. In those instances where the injection method is successful in obliterating the venous channels, it is successful by virtue of the contraction of connective tissue in the interstitium. Figure 19 shows a section taken in a case which has had treatment with quinine urea-hydrochloride. It must be evident, therefore, that therapeutic methods such as the injection method and the radium seed method are in reality imitations of nature's method of curing the ailment. They are thus basically sound in their principles.

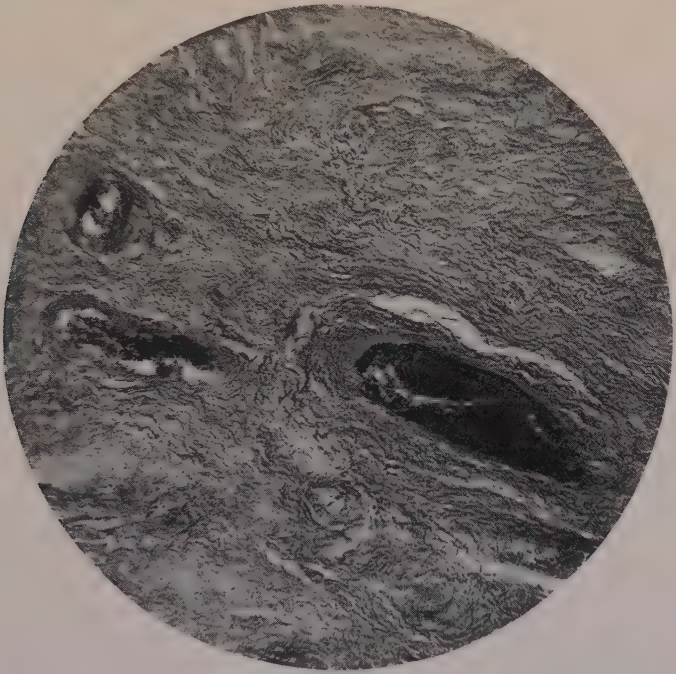


FIG. 19.—Note obliteration of venous channels due to contraction of connective tissue.

CONCLUSIONS

From the above it will, therefore, be seen that the clinical condition known as hemorrhoids, when judged on the basis of the pathology found locally, is essentially a vascular degenerative process. It primarily involves the branches and tributaries of the internal hemorrhoidal plexus of veins. It is degenerative in nature, as are all other varicosities. Secondarily, changes are induced in the overlying mucosa and to a greater degree in the underlying submucous areolar tissue. At the outset of the process the condition is a simple one; later, it is one complicated by the secondary changes of a mechanical nature, such as thrombosis or prolapse, or of an infective nature, such as chronic productive inflammation or ulceration.

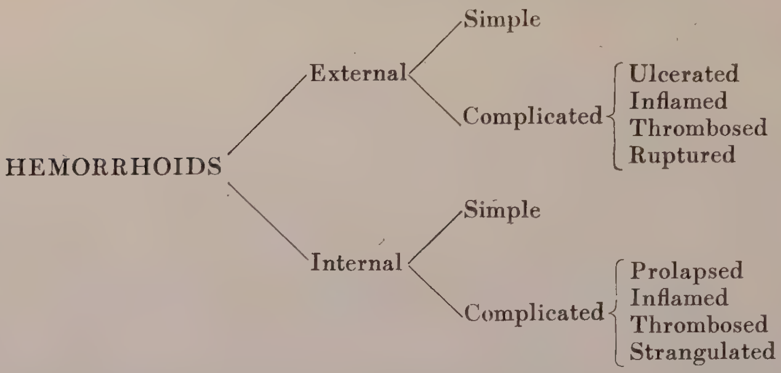
CHAPTER V

CLASSIFICATION OF HEMORRHOIDS

THE following schematic arrangement is offered as a means of thoroughly understanding the different varieties of hemorrhoids and their relation to one another. It must be quite clear that in order to treat the condition intelligently we must have in mind an understanding of the structure and peculiar characteristics of each variety. Thus when considered from the standpoint of their anatomical location, hemorrhoids may be either external or internal, depending on whether they are located externally or internally to the external sphincter of the anus. In the first instance, the veins affected are those which are tributaries to the inferior hemorrhoidals, whereas in the latter case, the veins affected are tributaries to the middle and superior hemorrhoidal. Considered from the standpoint of the pathological process found, hemorrhoids may be considered either simple or complicated, that is, either simple varicosity or varicosities complicated by some other factor, either mechanical or infective in nature. Finally, from the clinical standpoint, hemorrhoids are often classified as either reducible or irreducible. However, there seems to be little practical value in this latter classification, since treatment is based upon the pathology rather than upon the clinical peculiarities of the hemorrhoid.

The following table presents a résumé of the foregoing:

AUTHOR'S CLASSIFICATION OF HEMORRHOIDS



The two main varieties mentioned above may coexist in the same individual. Some authors prefer to designate such a condition as a case of externo-internal hemorrhoids or mixed hemorrhoids. It seems, however, much more advantageous to consider each variety an individual entity, inasmuch as we shall see the treatment depends entirely upon the position and whether the hemorrhoid is external or internal. Such a classification, therefore, as mixed hemorrhoids is only mentioned to be condemned.

It will also be noted that the above classification gives no place to the so-called capillary hemorrhoid nor to the arterial hemorrhoid. The reasons for this are stated in the chapter on pathology. Briefly it may be stated here that these terms are misnomers and it is the author's belief that they can serve no useful function in any classification pretending toward practical utility.

CHAPER VI

DIAGNOSIS

In arriving at a diagnosis as to the existence of hemorrhoids absolutely nothing must be taken for granted. The history of bleeding at defecation or the history that something protrudes at stool is not sufficient to warrant a diagnosis of hemorrhoids. The diagnosis of any condition should represent a true statement and a complete statement of the pathological basis for the patient's symptoms. This is the equivalent of saying that what is required is the truth, and the entire truth, concerning his ailment. Without a thorough proctoscopic and sigmoidoscopic examination it cannot be attained. Moreover, a thorough physical examination is equally necessary. As has been stated elsewhere, in patients over the age of thirty-five, the occurrence of hemorrhoids should be considered an indication for a barium enema examination of the entire colon, so that we may not unsuspectingly treat a relatively benign ailment such as hemorrhoids and neglect a malignant neoplasm higher up in the intestinal tract.

There are certain features which should lead the physician to suspect the existence of hemorrhoids. Firstly, the history of some form of rectal discomfort or some abnormal feature in defecation. Thus constipation may very properly lead one to insist upon a thorough rectal examination.

A history of bleeding or of protrusion upon defecation is also sufficient basis for requiring proctoscopic examination. A discharge of mucus from the rectum should be investigated.

Itching about the anus or other parts of the perineum will often compel examination of the rectum.

Pain very frequently is a feature which attracts the patient's notice and portends that all is not right in his lower bowel. Not only may this openly exhibit itself as a soreness on defecation, but quite as frequently there may be present a misreferred discomfort, such as backache affecting the sacrum or the lower lumbar region, or sciatica of particularly insistent character.

But after all, a diagnosis of hemorrhoids is most definitely reached by a direct physical examination of the rectum. External hemorrhoids will be noted as dilated varicose perianal veins in a radial network circling the anus. Their appearance in general is that of varicose veins elsewhere in the body. They are tortuous bluish vessels directly beneath the skin. They rarely extend for more than an inch or an inch and a quarter from the anus. They are soft and yielding to pressure and are not attached to the overlying skin, which is freely movable. A thrombotic external hemorrhoid appears as an oval firm mass in the perianal region immediately beneath the skin, which is drawn taut over its surface. It is regular in shape. Internal hemorrhoids when protruding appear as bright-red mulberry-shaped masses, protruding through the lumen of the anus. As a rule they are readily replaced by pressure and are found to arise in the wall of the upper anal canal and lower rectum. They may bleed upon touching or they may contain thrombosed vessels when strangulated. If infected, the mucosa overlying them will be seen to be eroded by irregular ulcers. If the internal hemorrhoids are not prolapsed they may be seen through the proctoscope as vascular swellings arising from the wall of the rectum and protruding into the lumen thereof. They most often arise in the right anterior region, in which location the largest hemorrhoid is usually seen. The right posterior or left lateral hemorrhoidal radicles are usually the next largest. Hemorrhoids may occur, however, in any portion of the circumference of the lower rectum.

There are some who claim that they can diagnose the existence of hemorrhoids by the insertion of a finger in the rectum and the palpation of the rectal and anal walls. This claim is not made so freely by those of us who confine our practice exclusively to rectal diseases, and I, for one, would never make a diagnosis of hemorrhoids solely upon digital examination.

To briefly state the conditions and complaints which should draw attention to the possibility of the existence of hemorrhoids, I will restate:

1. The history of bleeding from the rectum.
2. Protrusion from the rectum.
3. A history of discomfort in the rectum.
4. A history of constipation.
5. The presence of an unexplained backache.

The cardinal signs and symptoms of external hemorrhoids are:

Signs: 1. The existence about the anus of vascular masses which are seen to be varicose perianal veins.

2. The sudden development of a firm regular oval mass of bluish color in the perianal region.

Symptoms: 3. Itching of the perianal skin. This is often the leading symptom of simple external hemorrhoids.

4. Burning sensation referred to the perianal skin.

5. Pain in the anal region is the outstanding symptom of complicated external hemorrhoids. It is of sudden development, sharp stinging character, and is out of all proportion to the pathology found. It is increased by the sitting position and by the act of defecation. It is relieved by nothing but a powerful analgesic.

6. Tenderness of the anal region is a marked though later symptom in complicated cases. It is referred most particularly to the area of the thrombotic or ulcerated hemorrhoid.

7. Sense of weight or fulness of the lower rectum. This is most marked in simple external hemorrhoids and early in the course of the complicated variety; with the occurrence of more urgent symptoms, such as pain, that of fulness is overshadowed.

8. Disturbance of urinary function is noted in the instance of a thrombotic external hemorrhoid. Increased frequency is often noted.

The cardinal signs and symptoms of internal hemorrhoids are:

SIGNS: The presence in the lower rectal wall of varicose veins which give the following appearance when viewed through a proctoscope; sacculated, murky, red non-pedunculated swellings under the mucosa which protrude into the lumen of the lower rectum and anal canal. Upon digital examination they are found to be soft and yielding though not individually definable. The mucosa covering the hemorrhoids may show erosions and ulcerations.

When prolapsed the hemorrhoid retains, except for position, the same characteristics and may be traced through the anal orifice to its origin in the lower rectum.

SYMPTOMS: In order of frequency of complaint:

1. Bleeding.
2. Protrusion.
3. Edema.
4. Mucus leakage.
5. Pruritus of the anus.
6. Sense of incomplete evacuation.
7. Pain.
8. Referred pain to anus or rectum.
9. Misreferred pain to back or legs.
10. Reflex effects.
    —on the sphincter.
    —on the intestinal canal.
    —on the urinary organs.
    —on the genital organs.
    —on the general nervous system.

SYMPTOMS

1. BLEEDING FROM THE RECTUM.—This is considerable at times and of a bright-red color. At other times its presence is only detected by the observation that the feces are streaked with blood.

2. PROTRUSION.—The prolapsed hemorrhoids protrude

through the anal orifice and may be seen as a soft nodular mass covered by mucosa. By gentle pressure they may be reduced through the anal orifice into the rectal cavity. Some authors term prolapsed hemorrhoids as third-degree hemorrhoids. They do, in a sense, represent the final stage in the hemorrhoidal process. On the occasion of the first prolapse of the hemorrhoids, they are invariably associated with edema. When they are allowed to remain prolapsed over an appreciable length of time or if they prolapse very frequently, the covering mucosa is invariably ulcerated.

3. Edema.—Edema of the perianal skin immediately about the anus is usually associated with the prolapsing of hemorrhoids. Thus it is usually unilateral and on the side of the prolapsed hemorrhoid. If more than one hemorrhoid prolapses edema of the entire perianal region occurs. In that event edema from this cause is usually moderate and transitory. Another cause for edema of the perianal tissues is infection and is chiefly seen when external hemorrhoids become infected or inflamed.

4. Discharge of Mucus.—This symptom is chiefly found where internal hemorrhoids are so large and prolapse so frequently as to weaken the tone of the sphincter muscle and allow the escape of mucus, which collects in the rectal ampulla after being secreted by their irritated mucosal surfaces. Hemorrhoids associated with this symptom are not infrequently referred to by the laity as "mucus piles."

5. Pruritus.—The anal pruritus associated with hemorrhoids is usually moderate, though when skin changes are induced in the perianal skin as a result of scratching from this cause, the pruritus is perceptibly increased and at times becomes a dominant symptom. The basis for the symptom in association with internal hemorrhoids is partly that it is a misreferred

sensation; the pathological cause being in the rectum and the skin area to which the sensation aroused is referred is the perianal skin. The edema in the perianal skin and the mucus discharge induced by and associated with prolapsed hemorrhoids are conditions which cause a direct pruritus.

6. SENSE OF INCOMPLETE EVACUATION OR TENESMUS.—This is a frequent and early symptom in hemorrhoids and is due to the fact that when the hemorrhoidal swellings press into the lumen of the lower rectum, they lie upon that portion of the rectum in which the sensory nerve-endings of the reflex arc to the defecation centre lie. They therefore cause impulses to be sent to this defecation centre and the sense of incomplete evacuation arises, and the mode of response is tenesmus, or ineffectual extrusive efforts.

7. PAIN.—Pain referred to the anus or rectum is a rather late symptom in the course of a hemorrhoidal case. When hemorrhoids are prolapsed, pain partakes of the character of throbbing. If the hemorrhoids be replaced, throbbing immediately ceases. If the hemorrhoids be complicated by fissure, severe lancinating pain may likewise be present and it is usually of an intermittent character. When pain is continuous, ulceration, either benign or malignant, may be suspected.

8. REFERRED PAIN OFTEN RESULTS FROM HEMORRHOIDS.—It appears clinically in the form of sacral or lumbar backache. Sometimes it is referred to the coccyx. In this location it is known as coccygodynia. Pain may also be referred down the leg, along the course of distribution of the third sacral nerve.

9. REFLEX EFFECTS.—In accordance with the particular organ upon which the reflex action is exerted, various reflex effects are noted. Chief among these are the constipation and flatulence when the intestine is affected; disturbances of urinary function, either increased frequency or inability to urinate

when the bladder is affected. Similarly, disturbances of menstruation are noted as a result of reflex irritation of the ovaries. Sphincteric spasm is induced whenever the hemorrhoids become irritated either by mechanical or infective damage. Reflex effects upon the general nervous system are often marked by increased nervous excitability, anorexia, and a state of mental depression simulating melancholia.

It is earnestly hoped that a diagnosis of hemorrhoids will never be made on the basis of any *one* of the foregoing symptoms, since practically none of them are pathognomonic of the existence of hemorrhoids.

In a recent article entitled "How to Make a Snapshot Diagnosis of Hemorrhoids," I endeavored to point out the injustice of taking too much for granted when examining a case for hemorrhoids. I have had so many pleasing comments upon this article that I feel impelled to restate here some passages from it. These happen to be quite apropos.

The term, "snapshot diagnosis," arose some years ago from the seeming ability of a clever diagnostician to arrive at a formed diagnosis of whatever case presented itself to his notice with about the same rapidity that one may take a snapshot picture with a camera. Since that time, those of us who aim to be considered clever attempt to emulate the aforementioned worthy and make our diagnoses instantaneously. The following paragraphs are a sure guidance for the attainment of such skill.

A case presents itself at your office and complains of pain upon defecation. Plainly the snapshot diagnosis is—hemorrhoids! Careful proctoscopic examination, however, shows the presence of an anal fissure but an otherwise normal rectum and anus.

Another case complains of a protrusion from the rectum upon defecation. What could be simpler than the snapshot diagnosis—hemorrhoids! Careful proctoscopic examination reveals the presence of a large prolapse of the rectum, which protrudes to the extent of three inches from the anus following defecation and which may be manually replaced.

Yet another case complains of bleeding from the rectum and soreness upon defecation, with intermittent soreness at other times. Swift and sure comes the snapshot diagnosis—hemorrhoids! Careful proctoscopic examination, however, leads one to the conclusion that the cause of the patient's soreness and bleeding lies in a chronic ulcer of the rectum.

The next patient tells you he has piles, "itching piles." So nothing could be simpler than the snapshot diagnosis—hemorrhoids! Proctoscopic examination, however, to the contrary, shows the absence of hemorrhoids and the presence of condylomata about the anus.

Finally there comes a case in which we have a history of persistent bleeding and some pain upon defecation. Nothing could be more definite than the diagnosis of hemorrhoids. Unfortunately, however, thorough proctoscopic examination discloses the presence of a large ulcerating mass infiltrating the rectal wall, and a biopsy of this shows it to be an adenocarcinoma of the rectum.

I fear that in the above-mentioned instances I have spoiled a good story by sticking in the facts, but facts are troublesome things to deal with if repressed, for, like murder, they "will out," sometimes to somebody's embarrassment. We would not expect a camera to take a picture without allowing it the privilege of at least one look, so we cannot logically expect to arrive at a conclusion as to the nature of rectal ailments without being accorded the privilege of a look, which, in this instance, should consist of a careful rectosigmoidoscopic examination.

You may be assured that there is but little exaggeration in the foregoing. It is, I am sorry to say, true to life. The causes responsible for such a situation are partly the false modesty of patients in respect to rectal ailments and partly the indulgence of those physicians who permit themselves to arrive at a diagnosis of rectal ailments without making a rectal examination. It might be of service to remember that *not all rectal pains are due to piles, nor is all rectal hemorrhage indicative of hemorrhoids.*

CHAPTER VII

EXAMINATION PROCEDURE

There seems to have been a time when an examination of the rectum was thought unnecessary. At least there was a time when such an examination was considered an altogether unnecessary embarrassment to subject a patient to. Even at the present time it is often considered inconvenient, either for the reason of regard for the patient's feeling or indifference on the part of the physician. The fact is that the value of a rectal examination is at present not fully appreciated. It will be admitted that of late there has been a tendency toward a recognition of the importance of this matter. Physicians are becoming more and more cognizant of the fact that this organ is quite as likely to be disordered as any other, and that it may cause many symptoms other than purely local ones. Thus, the dictum has come into favor that "no physical examination is complete without a rectal examination."

I wish to call attention, however, to the fact that the rectum is but one part of the body and that symptoms referred to it may be instigated by diseased conditions elsewhere than in the rectum. Hence, it is quite as logical to propose the dictum that *in cases of rectal disease, no examination of the patient is complete without a thorough, general physical examination.*

Granting, then, the unquestionable value of a complete physical examination in all cases, we return to the requirements of a thorough rectal examination in the modern sense. The following is submitted as a guide as to what should be looked for and what possible findings may suggest:

Thorough examination of the lower bowel may be accomplished by observing the following procedure:

1. Inspection of the perianal region.
2. Digital examination of the anal canal, lower rectum and adnexa.
3. Rectoscopy.
4. Rectosigmoidoscopy.
5. Barium enema study of the colon when indicated.

1. Inspection. What to look for:
    - a. Bony landmarks of the posterior perineal triangle (malformations).
    - b. Skin changes, excoriations, scars, sclerosis, induration, fistulous orifices (pruritus, thrombotic external hemorrhoids, former operations, fistula, sinus).
    - c. Protrusions of and through the anal orifice (prolapse, polyp, hemorrhoids).
    - d. Discharges of pus, mucus, or blood (abscess, fistula, proctitis).
    - e. Evidences of emaciation in the ischiorectal fossæ (cancer).
2. Digital examination. What to look for:
    - a. Tone of sphincter (fissure, spinal cord disease, tabes).
    - b. Areas of tenderness (abscess) or induration (fistula).
    - c. Condition of the prostate and seminal vesicles (hypertrophied prostate, cancer of prostate).
    - d. Cervix (retroverted uterus, cancer of cervix).
    - e. Position and mobility of coccyx.
    - f. Patency of bowel (stricture, new-growth).
3. Rectoscopy. What to look for:
    - a. Foreign bodies.
    - b. Congestion (proctitis).
    - c. Varicosity (hemorrhoids).
    - d. Inflammatory swellings (cryptitis, abscess).
    - e. New-growths (polyps, cancer, hypertrophied papillæ).
    - f. Lacerations (fissure).
    - g. Decreased lumen (stricture).
4. Rectosigmoidoscopy. What to look for:
    - a. Foreign bodies (worms, enteroliths, fecaliths).
    - b. Congestion (colitis).
    - c. Ulceration (colitis, specific ulceration).
    - d. New-growths (polyps, cancer).
    - e. Decrease in lumen (spasm or organic stricture).
    - f. Diverticula.
5. Barium enema study of colon. What may be found:
    - a. Spasticity (colitis).
    - b. Narrowing of the lumen (simple stricture or cancer).
    - c. Evidence of adhesions.
    - d. Incompetency of the ileocecal valve.
    - e. Diverticulosis.

In view of the broad etiological attitude suggested and also in consideration of the fact that in many instances hemorrhoids are induced by organic conditions elsewhere than in the rectum, history-taking should be chiefly devoted to inquiries as to the previous occurrence or presence in the family or in the patient of such conditions as may possibly be causative in or relative to the production of hemorrhoids. As examples of this may be mentioned:

1. Rectal disorders:
    a. Family history of hemorrhoids, prolapse, or other rectal diseases.
    b. Personal history of these ailments.
2. Gastro-intestinal disorders:
    a. Family history of cancer, dyspepsia, chronic constipation.
    b. Personal history of habits of overeating, of chronic constipation, of chronic diarrhea, or alcoholism.
3. Cardiovascular disorders:
    a. Family history of heart disease, aneurysms, arteriosclerosis, or a history of varicose conditions, such as varicocele or varicose veins of the leg.
    b. Personal history of these same conditions.

While the value of history-taking is appreciated, yet from time immemorial, seeing has been considered the equivalent of believing. There are physicians who *will* make a diagnosis of hemorrhoids upon the basis of the patient's history alone. Indeed there are some who will accept the patient's self-made diagnosis of "piles." Either because of indolence or a delicate esthetic sense, a physician of this type makes no rectal examination. And yet there is not a single other ailment which he would think of treating without such a preliminary examination!

There is, of course, by way of excuse for this situation, the fact that many patients are so burdened with futile modesty that they will permit no examination. Indeed many, particularly women, seem to prefer the agony of a daily replacement of protruding hemorrhoids, or the debilitation and anemia from bleeding, to the simplest form of examination. Needless to say, the patient must be convinced of the need for an examination and the absurdity and possible injustice of treatment based upon insufficient knowledge of this complaint. Others, even men, dislike the exposure occasioned by an examination. This objection is easily dealt with by draping the patient as suggested in the following paragraphs.

Still other patients dread the pain which they believe to be the inevitable accompaniment of rectal examinations. There is no reason for causing pain in the case of simple hemorrhoids if the proper instruments are used. One cannot, of course, expect to ram into the anus instruments as brutal as, unfortunately, some of the popular style of specula are, without a complaint from the patient. A good question to ask one's self when selecting a proctoscope or anoscope is—supposing occasion required that I had need of a rectal examination, would I want *this* used on me?

From the physician's standpoint his reluctance to make a rectal examination may be explained by the fact, the regrettable fact, that although the study of rectal diseases is included in the curriculum of most medical schools, many of them give little if any time for its teaching. The average physician, therefore, goes forth into practice with a very superficial knowledge of rectal disease. Hence he often feels that he would not be able to come to definite conclusions as to his findings even if he did make an examination; so he omits the examination.

Then too, his experiences with rectal examinations have not been reassuring. Perhaps, on several occasions he has attempted to insert an anoscope such as shown in Figure 20, A and B. The patient makes an outcry, refuses further examination, and excuses himself from subsequent punishment. All of this may be avoided by the use of a gradually dilating speculum of reasonable diameter—Figures 20, C and 27.

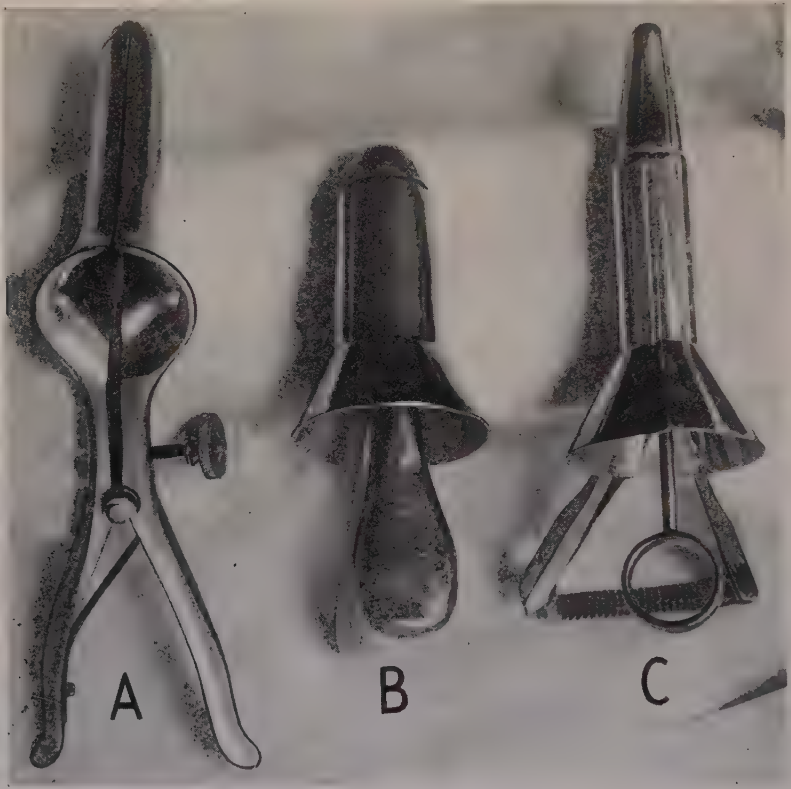


Fig. 20.—Three types of specula: A, Pratt speculum; B, Kelly anoscope; C, Montague speculum.

Finally, there seems to be an erroneous impression abroad as to the usual contents of the rectum. The thought of encountering feces and having instruments fouled by them is not a pleasant one. Yet the fact in the matter is that the prospect of finding feces in the rectum is relatively slight. Occasionally one sees small well-formed fecal masses, but these are not troublesome. The presence of liquid feces in the rectum is rare unless the patient has taken a laxative or has been "prepared." Thus in the majority of cases we need not be apprehensive of so disagreeable a condition interfering with our examination, and on the other hand we need not apprehend it even if present because in that event examination is not possible.

Preparation.—When proceeding to a matter of an examination whose object is to determine the presence of hemorrhoids, the question naturally arises as to what preparation the field to be examined should be subjected to. I am well aware of the fact that the general custom is to precede any such examination by liberal catharsis supplemented by an enema on the morning of the examination. My own experience has led me to the conclusion that such a procedure is not only unnecessary but is also productive of embarrassment both to the patient and to the physician. Those of us who make many rectal examinations know that under normal conditions, in the average case, the rectum and the sigmoid colon are almost always empty and hence quite suitable for examination. Thus my advice in regard to preparation is simply to make none at all. By so doing, the chances of a clean field are in our favor and we are in better condition to judge the normal state of the mucosa of the rectum and sigmoid. Should, by any chance, fecal matter be found in the rectum, a low enema of tepid water or saline may be given or the patient may be instructed to return the following morning. By this time normal evacuation will have taken place and the field will be presentable for examination. In this manner we avoid trouble occasioned by liquid feces induced by cathartics or by retained enema fluid. Moreover, the patient feels more comfortable, and any feature which renders the matter of examination easy for the patient should be considered a favorable factor.

Position.—The position of choice in examination of the lower rectum is the knee-elbow position. (Fig. 21.) In women, the left lateral or Sims' position is less embarrassing and quite as satisfactory. (Fig. 22.) Where a rectosigmoidoscopy is to be done, the knee-chest or knee-shoulder position (Fig. 23) is

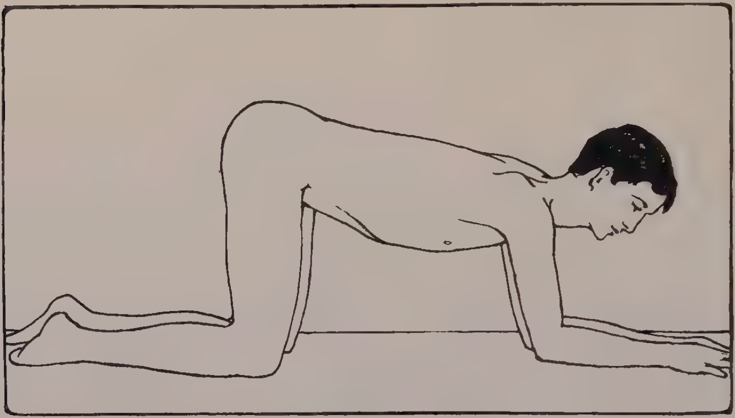


Fig. 21.—Knee-elbow position

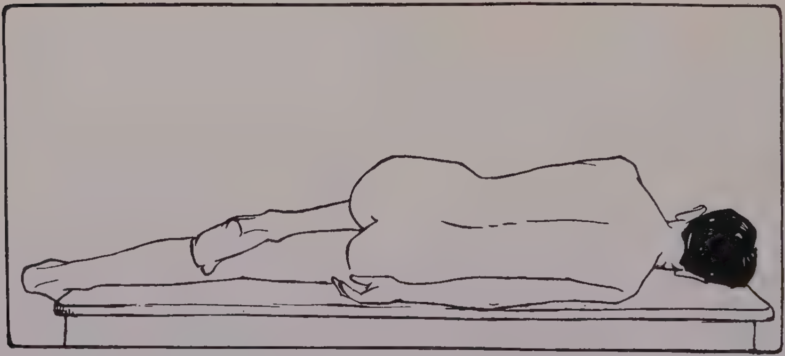


Fig. 22.—Sims' or left lateral position.

by far the most satisfactory, though here too it may be deemed advisable to use the left lateral position where women are to be examined. The dorsal position may, of course, be used, though it presents certain mechanical difficulties when rectosigmoidoscopy is to be done. During an examination for hemorrhoids, the latter may be more distinctly brought into view by having the patient rise upon his hands if in the knee-elbow position, or by forcible straining, as in the act of defecation, if in the left lateral position.

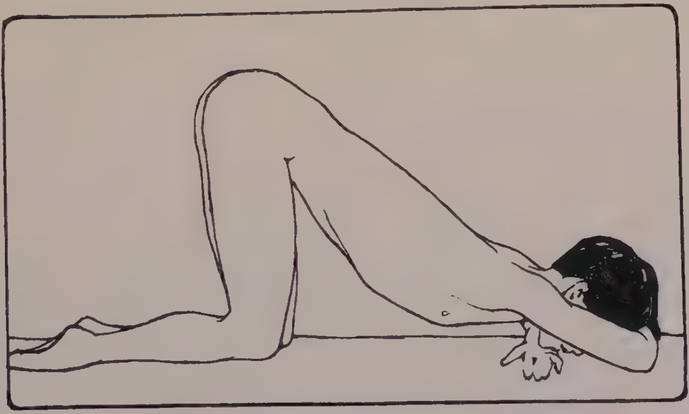


FIG. 23.—Knee-chest position.

METHODS.—There are various non-instrumental methods of examining the rectum. In the first place, by having the patient strain down, prolapsing hemorrhoids can be readily brought to view, in the majority of cases in which they are present. In cases in which they are not readily brought to view by this method, the administration of a low enema of soap-suds with immediate evacuation and straining will invariably thoroughly prolapse the hemorrhoids present. The same effect may be obtained in a manner much more convenient to the physician by the employment of a suction cup, such as is shown in Figure 24. This contrivance is used as follows: The lip of the glass cup is smeared with vaseline and the cup is then placed immediately over the anal orifice. While holding the cup firmly in this position, suction is induced by means of the pump connected with the cup by a flexible rubber tube. The negative pressure thus developed causes an immediate eversion of the anal canal and lower rectum with prolapse of the hemorrhoids present.

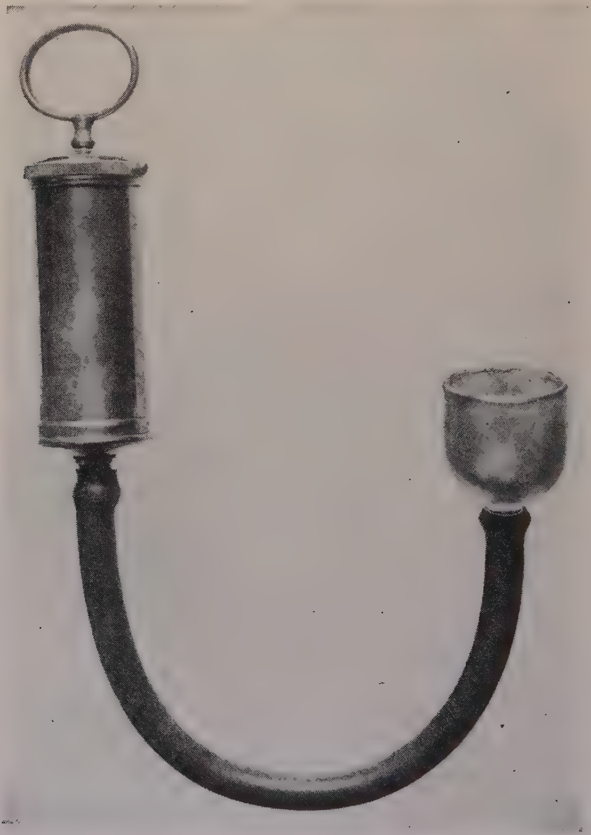


Fig. 24.—Suction cup used for withdrawing hemorrhoids.

The extent of the eversion produced is approximately proportionate to the negative pressure generated in the cup. (Fig. 25.) While this method has much to commend it from the standpoint of convenience to the surgeon, yet if care is not used in the application of this method, hemorrhage may be induced with, of course, harmful effects upon the patient. Furthermore, I am not altogether convinced but that some of the venous dilatation observed in the hemorrhoidal veins under the conditions attendant upon the employment of the suction cup method is artificial. Certain it is that a condition of negative pressure will induce similar dilatation in blood-vessels elsewhere in the body. We are thus liable to do the patient the injustice of ascribing to him a pathological condition, hemor-

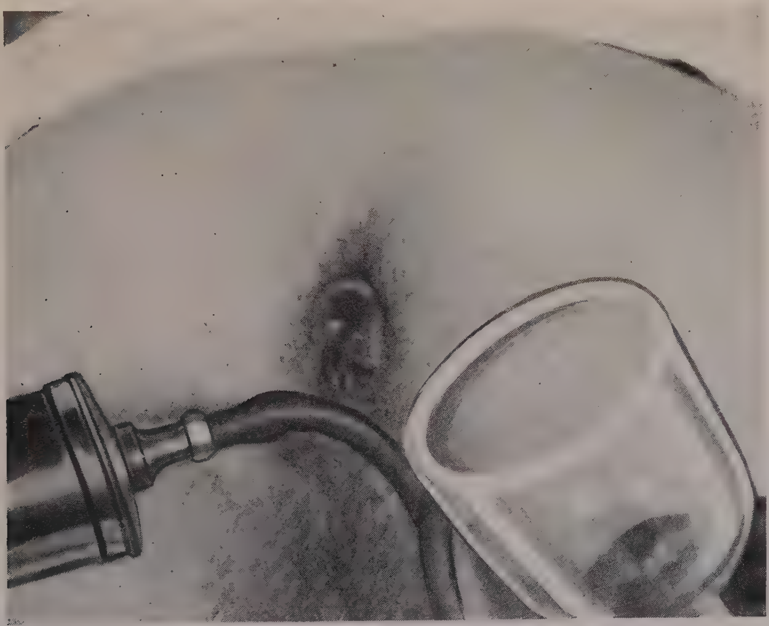


Fig. 25.—Suction cup in use.

rhoids, when, in fact, what is observed is merely a normal physical response to a physical state of negative pressure.

There is another non-instrumental method of examining the rectum. This is by means of digital separation of the walls of the anal canal, as shown in Figure 26. A fairly good view of the anal canal and lower rectum may be obtained. But both of these methods are incomplete, to say the least, and it is my opinion that examination by instruments should always be made. If the correct instruments are used; if the anatomy of the parts is borne in mind and if gentleness be used in their introduction, instrumental examination should never be painful. In times past and to a certain extent in our own day, physicians thought that rectoscopy required a general anesthesia. But we

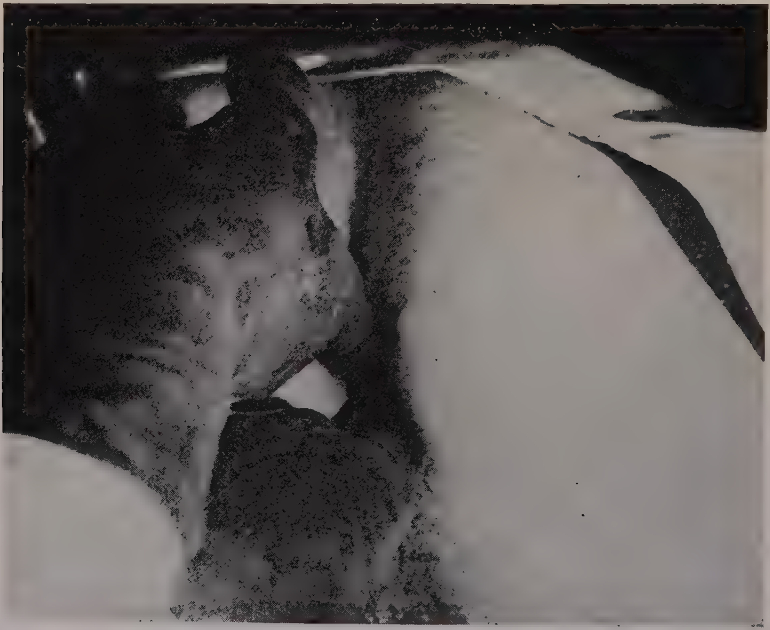
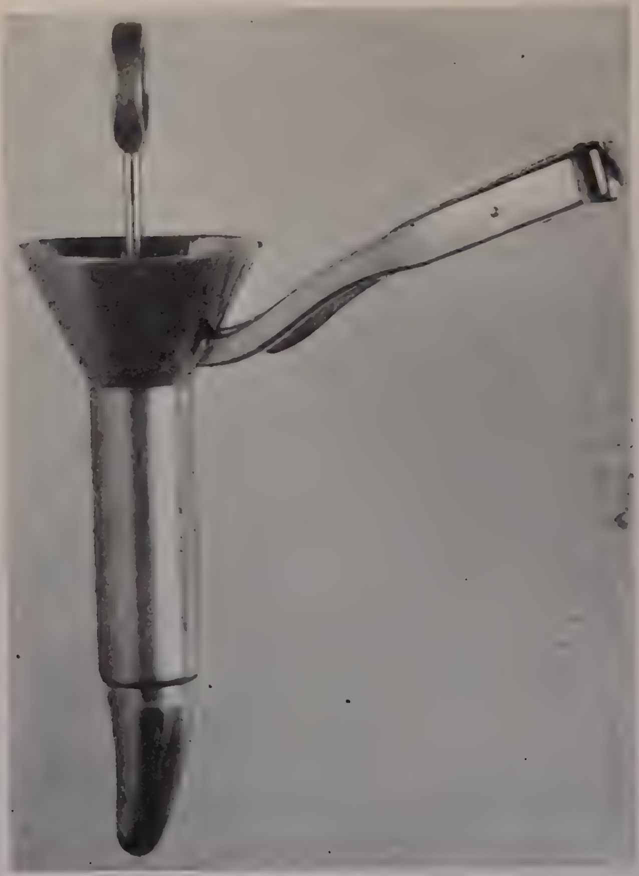


FIG. 26.—Non-instrumental method of examining anal canal.

now know that this is absolutely unnecessary in by far the majority of cases, and the opinion probably originated from the pain occasioned by brutal instruments and cumbersome methods. Except in the case where a painful fissure complicates, anesthesia should never be thought of. Even in this case, general anesthesia is unnecessary in view of the complete relaxation that can be obtained by local anesthesia or, if need be, by sacral anesthesia. In any event, a *thorough* examination of the lower bowel must be made, and this may be accomplished only by observing the procedure outlined in the early part of this chapter.

Draping.—It may seem superfluous to give suggestions as to the draping of a patient, yet this little formality is often overlooked, either through haste or indifference on the part of the physician. However, it is always a matter of embarrassment to the patient, even to the male patients. It is well to bear in mind the psychology of the patient and to realize, as Von Leyden said, " To the patient there are no little things." Perhaps the best means of draping a patient is to have a specially prepared sheet which has at its centre an aperture of about eight inches in diameter. Such a sheet can be so draped as to completely cover the patient with the exception of the area under examination. There are many patients who will be extremely grateful for this avoidance of unnecessary exposure.

Instruments.—In the course of such an examining procedure as has been suggested, one comes to the matter of instruments. While there are many instruments suitable for anal and rectal examination, the one which I have found most satisfactory, both for causing a minimum of discomfort to the patient and for giving a maximum opportunity for examination, has been my own dilating rectal speculum shown in Figure 27.



(Courtesy of George Tiemann Co., New York, N. Y.)

Fig. 27.—Montague dilating rectal speculum affords both direct and lateral view without reinserting.

Briefly stated, this is a rectal speculum which makes possible both a direct and a lateral view without removal and reinsertion of the speculum. It is of great advantage both in examining the lower rectum and anal canal, and in operative work in that region. It is essentially a short, split, circular tube provided with an obturator and also with a hinge-joint on its inferior surface; the handles controlling the sides are kept apart by a spring between them or in any intermediate position between " open " and " closed " by means of the automatic rachet-way between the handles. A long lip on the edge of the rachet-bar effectually prevents pinching of the mucosa on withdrawing the instrument, as complete closure cannot be made except by deliberate attempt.

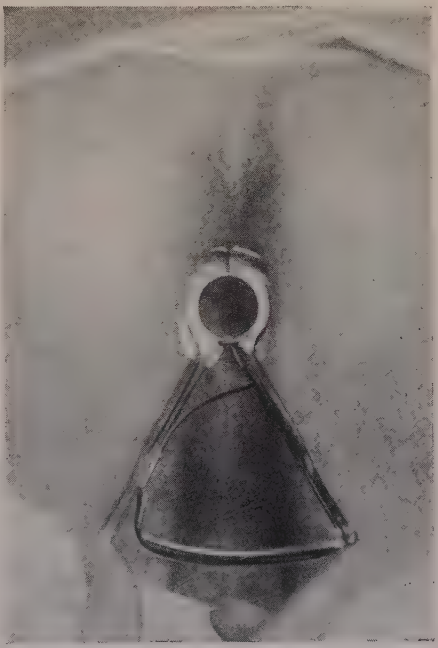


FIG. 28.—Speculum showing direct view.

When one desires to use this instrument as an ordinary proctoscope or anoscope, he merely inserts it and removes the obturator. This affords a direct view of the rectal cavity and anal canal as shown in Figure 28. Should he decide that a lateral view, such as is obtained in a Brinkerhoff speculum, is desired, a simple slight pressure on the handles opens the speculum wall to any desired degree; a rachet keeps it open automatically. (Fig. 29.) For instance, should wide exposure of the wall of the rectum be needed, as when one uses a piano-hinge, duck-bill, or Bodenhamer speculum, a little more pressure will produce the result without removing and replacing the instrument. Where dilatation is wanted, as when one uses a Pratt speculum, it may be obtained with this instrument by merely completely approximating the handles. One distinct advantage my speculum has over any of the other specula mentioned, except the Brinkerhoff, is that when one is exposing one side of the rectum, the other does not prolapse through and so interfere with examination or operative procedure. This does occur in all other types mentioned except the Brinkerhoff. The latter has, however, two distinct disadvantages not present in my speculum. These are, namely, its conical shape, which makes retention *in situ* difficult, and secondly, the fact that should one desire a little larger exposure he must, when using the Brinkerhoff, withdraw it and reinsert another larger one, whereas when using the author's, no removal and reintroduction are required—just a little more pressure on the handles. Naturally, the increased simplicity of the examination renders it less of a matter of torture to the patient.

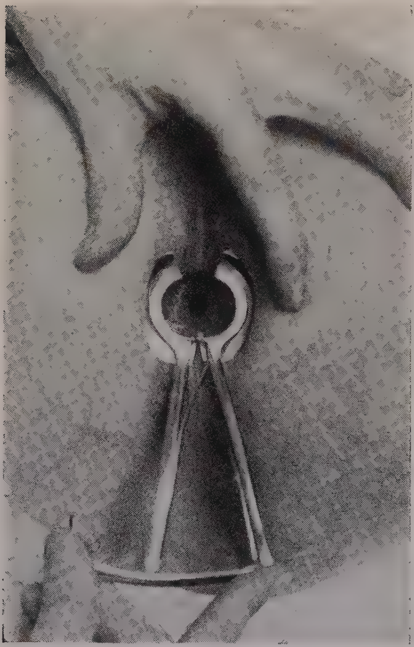


Fig. 29.—Speculum open for obtaining lateral view.

Briefly stated, the advantages of the instrument I have devised are:

1. An unequalled completeness of examination is allowed by the fact that both direct and lateral views are afforded.
2. The size of the instrument is large enough to permit complete examination with a minimum of discomfort to the patient. Very few complain of that overstretching which accompanies the use of the ordinary anoscope or proctoscope.

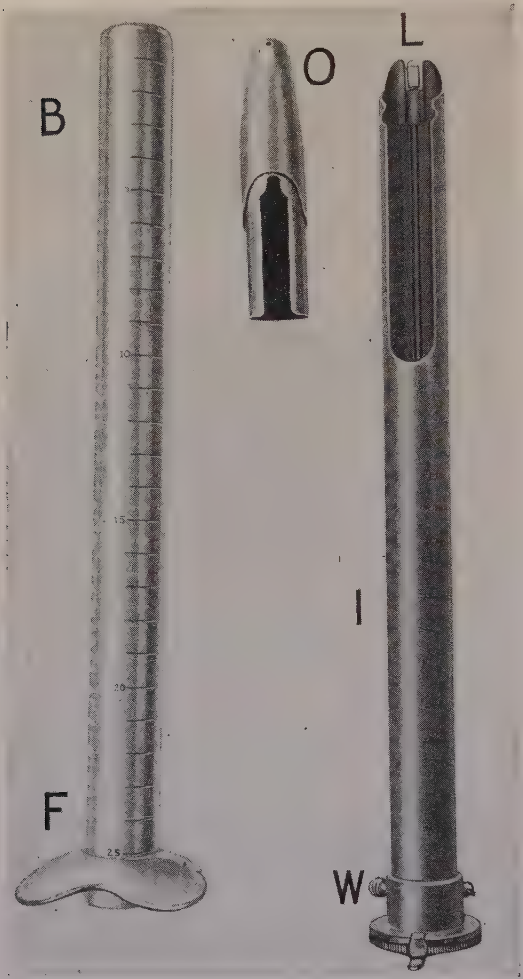
3. The instrument is the utmost in convenience to the physician, as its introduction is easy and its adjustment for direct or lateral view is easily accomplished without removal and reinsertion.
4. The shape of obturator and the reasonable diameter of the barrel of the instrument aid facility in introduction.
5. " Pinching " of the mucosa cannot occur owing to the safety device previously mentioned.
6. " Tearing " of the anal margin does not occur with the use of this instrument for the reason that its diameter does not necessitate undue tension on the anal mucosa.
7. Adjustment is automatic, thus dispensing with cumbersome removable slides and check screws.

The other instruments in use are the Kelly anoscope, the Tuttle proctoscope, the Brinkerhoff speculum, and the Pratt bivalve speculum, all of which are shown in accompanying figures. My own instrument has been designed with the object of obtaining all the advantages that each of these possesses, and at the same time, eliminating all their disadvantages.

For rectosigmoidoscopic examination, I am quite sure that my new rectosigmoidoscope will be found eminently adapted for this work.

It gives but little discomfort to the patient and at the same time furnishes a superior view of the rectum and sigmoid colon. (Fig. 30.)

Obvious and admitted deficiencies in current types of proctosigmoidoscopes are eliminated and many new features introduced. The instrument consists of three parts: a barrel (B) either fifteen or twenty-five centimetres in length, three-quarters of an inch in diameter, calibrated in centimetres, and furnished with a non-rolling flange (F) at its proximal end. Secondly, an obturator point (O) which fits onto an inner tube. Both of the above parts are durably made and may be sterilized by boiling. Thirdly, the inner tube (I), which slides like a telescope into the barrel of the sigmoidoscope. It acts as a light (L) carrier and has an attachment for the obturator point. The interior of this inner tube is of a dull-black gun-metal finish which successfully obviates reflections throughout the barrel of the sigmoidoscope. This inner tube acts as a combined dark chamber light carrier and by means of the obturator point combined also as an obturator. The distal part of this inner tube is exposed sufficiently to enable thorough cleaning. The proximal end of the inner tube is provided with a swinging window (W), which cannot be lost but which may be swung open to permit topical applications or instrumentation through the scope (Fig. 31). It is also provided with a binding-post for electrical (E) connection and an inflation nipple (A) for bulb attachment.



(Courtesy of Welch Allyn Co., Auburn, N. Y.)

FIG. 30.—Montague rectosigmoidoscope.

The manner of using this instrument is as follows: After inflating the instrument with air, the obturator point is gently

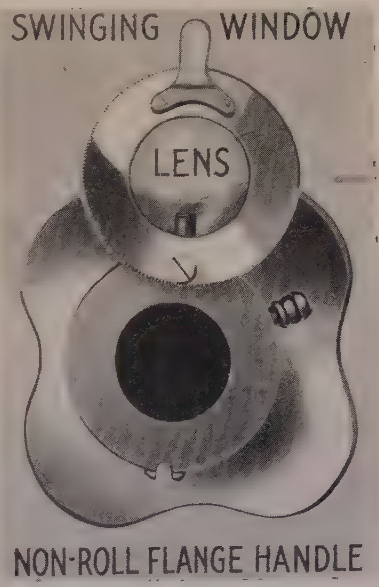


Fig. 31.—End view of rectosigmoidoscope.

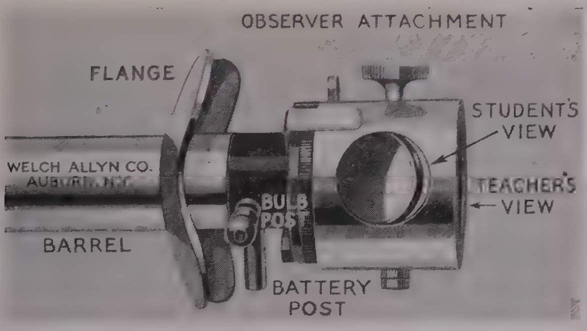


Fig. 32.—Attachment for convenient use with Sims' position.

inserted into the anal canal. Its dilating point gently divulses the sphincter without discomfort to the patient. Through perforations in the obturator point air passes into the bowel, and by gently inflating it, dilates it in advance of the instrument. When the instrument has been passed the requisite length, the inner tube is withdrawn, leaving the scope *in situ.* A simple slight pressure releases the obturator point, which may be dropped into a sterilizer. The inner tube is then lighted and reinserted. During insertion of the inner tube it may be seen whether the field is clear, and should there be any liquid feces they may be dealt with, without soiling the lamp, by merely withdrawing the inner tube to a safe distance. Then through the swinging window the area may be sponged clean and the inner tube advanced. Now, by withdrawal of the entire scope, all the mucosa of the sigmoid colon, rectum, and anal canal may be completely and easily examined. When rectosigmoidoscopic examination is done in the left lateral or Sims' position it will be found of great advantage to employ the plural observation attachment for the rectosigmoidoscope. (Fig. 32.) By means of this contrivance complete rectosigmoidoscopy may be performed on a patient in the Sims' position without requiring the physician to bend over or seat himself on a level with the anus. Examination may be quite as thorough and yet devoid of fatigue and indignity to the physician.

For the sake of brevity, and at the risk of bluntness, the features of this instrument which I believe render it attractive may be stated as follows:

1. The instrument is compact, easily sterilized, and durable. It may be carried in any doctor's bag of ordinary size without the need of a special case.
2. The dilating point facilitates easy insertion by gradually dilating the sphincter during its introduction.
3. The pneumatic obturator dilates the bowel in advance of the instrument by gentle inflation.
4. There is a durable distal light which may be withdrawn should there be danger of liquid feces soiling it and which affords light during the entire retreat.
5. The diameter is that which experience has shown to be most acceptable to the average patient.
6. There are no reflections in the barrel of the scope owing to the darkened interior.
7. The instrument is simplicity itself. There is no cumbersome handle nor awkward obturator.
8. It may be used either on a pocket battery such as that used for otoscopes or may be used with house current provided a rheostat is used.
9. Those parts of the instrument which touch the patient can be readily sterilized by boiling. These parts are strongly made; the delicate part of the instrument, that is, the inner tube

which carries the light and electric wiring, may be easily cleaned without damage.

Technique of Examination.—There is nothing difficult nor mysterious about proctoscopic examinations and they require no unattainable skill to accomplish. The physician who fails to diagnose the nature of a rectal ailment is usually the one who has refused to use those simple, yet necessary, methods by which alone a diagnosis may be reached. The chief trouble encountered is the discomfort caused the patient. This may be rendered practically negligible in the following manner: The patient must be reassured that the utmost care will be taken to cause him no unnecessary pain, and that although the parts are sensitive, it is highly essential that you actually see the diseased area. Then careful retraction of the nates is made so as to expose more fully the perianal region and permit inspection as previously outlined. Next we very gently insert a gloved finger (well lubricated with KY lubricant) into the anal canal. By doing this slowly the initial spasm of the sphincters may be overcome, and subsequent instrumental examination is made much easier than if this were not done. The objects of digital examination have been outlined heretofore and are seen to consist of far more than an attempt to diagnose hemorrhoids by palpation. Indeed a diagnosis of hemorrhoids made by digital palpation is little more than a guess. The following is a simple method of viewing hemorrhoids which readily prolapse: The examining finger is held in the anus and the patient is requested to bear down as if he were having a bowel movement. The finger is then gently withdrawn while the patient continues to bear down. By this procedure the hemorrhoids will not infrequently be induced to prolapse through the anal canal and thus be readily visible. Having inspected the perianal region and examined the anal canal and lower rectum digitally, we have ruled out certain conditions and mentally prepared the patient for the next step, which is the introduction of the rectal speculum. If digital examination has been thorough the sphincter will be found fairly relaxed, and if the instrument is given a liberal smearing with KY lubricant its introduction will usually be painless. The point of the instrument should be held rather downward away from the coccyx and a steady gentle pressure exerted along the line of the axis of the anal canal first and then along that of the rectum. After the instrument has been fully inserted the obturator is withdrawn and the walls of the rectum and anal canal are studied by gradually withdrawing the instrument. The manner of using the rectosigmoidoscope has been described. The important part of any of these examinations is gentleness, selection of suitable instruments, and thorough lubrication.

Of late I have come to consider the barium enema study of the colon equally as valuable as the rectosigmoidoscope in the diagnosis of rectocolonic diseases. This opinion has been impelled by a consideration of a fairly large number of cases in which some element of pathology would have been overlooked had not a barium study been made in compliance with a definite indication to be mentioned later. That this high opinion of the value of barium enema study is not generally held must be evident when we note that such a study is infrequently made except in conjunction with a general gastro-intestinal series. Even in the course of this, the examination of the colon often partakes of a perfunctory nature. It would seem, therefore, that the true value of the roentgen enema is not, as yet, fully realized. Perhaps the trouble lies in the fact that no worker in the field of rectal diseases, so far as I am aware, has, as yet, pointed out the definite indications for its employment or touched on the need of such an examination.

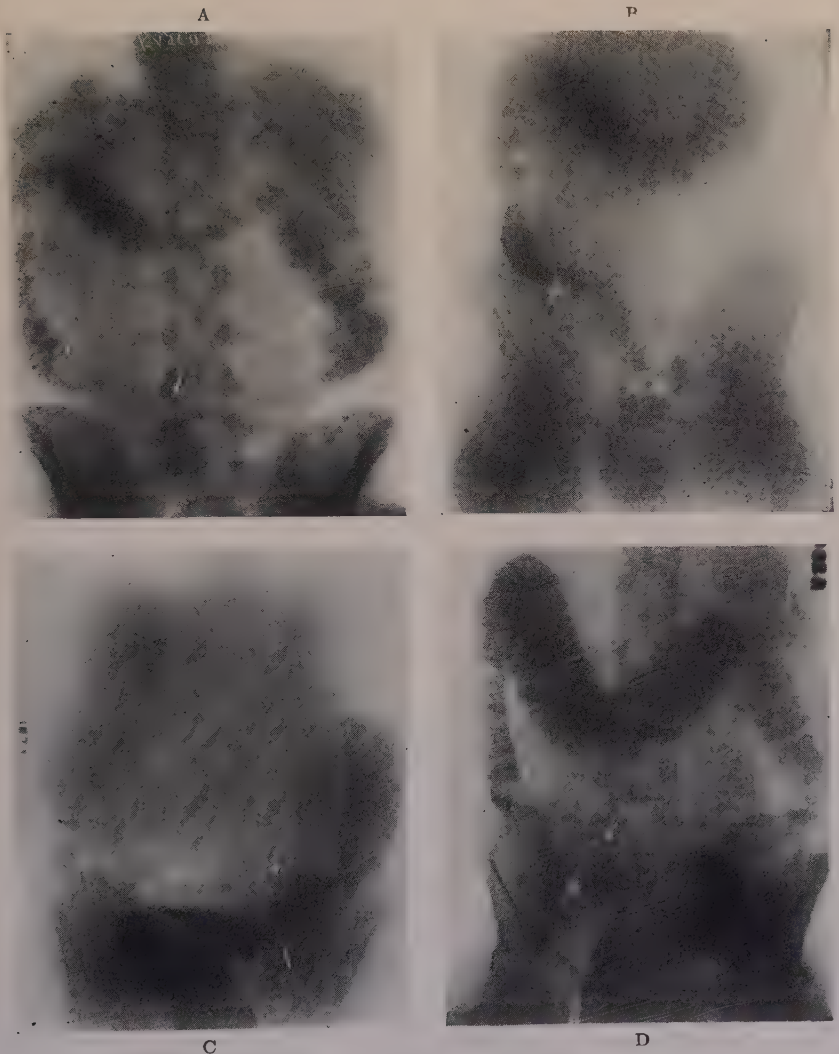


Fig. 33.—Four cases of unsuspected cancer of the colon found by routine barium enema study of colon in cases of hemorrhoids developing after thirty-five years of age.

Barium enema study of the colon should be done in every case of hemorrhoids in a person over thirty-five, in all cases of chronic constipation, of suddenly developed constipation, of obscure bleeding from the bowel, of unexplained anal pruritus, and in cases complaining of a sense of weight or burning in rectum, and finally in all cases of polyposis (Fig. 33).

Barium enema study of the colon should always be done by an expert or specialist in roentgenology, and as has been previously suggested, both fluoroscopic and plate examination should be made, not only of the distended colon, but also following evacuation.

Conclusions as to Examination

1. A thorough proctoscopic and sigmoidoscopic examination should be made in every case of suspected hemorrhoids.
2. A painless examination can be made by the use of suitable instruments, thorough lubrication, proper mode of examination, and the use of a proper position.
3. Anesthesia is not required in the vast majority of cases.
4. Preparation of the rectum and colon is undesirable previous to examination.
5. All cases should be draped.
6. In every person over thirty-five years of age with hemorrhoids an X-ray examination of the colon should be made.
7. In every instance where hemorrhoids are found to be present a search should be made to determine their cause.

I trust that the foregoing brief has carried the conviction that every case of suspected hemorrhoids is entitled to a thorough proctoscopic examination, for when one reflects upon the extent to which the pernicious practice of " snapshot diagnosis " is employed in the matter of rectal diseases, he finds the reason for at least some of the poor results seen in general practice.

CHAPTER VIII

DIFFERENTIAL DIAGNOSIS

The detailed statement given in the chapter on "Diagnosis" as to exactly what hemorrhoids are serves very well to prelude the following exposition of what hemorrhoids are not. It is, of course, apparent that a knowledge of the latter is equally as important as that of the former. As in all things circumstances at times conspire to simulate conditions that in reality are not present. We hasten then to a statement of the pathological conditions which are likely to be confused with hemorrhoids.

An error in diagnosis is after all nothing more or less than an illusion—a mistaken impression—a false conclusion. As in social life the foundation of this error in perception or a fallacy in judgment is most frequently found to lie in an incomplete knowledge or an incomplete consideration of the data available. These errors we hope to obviate by the following detailed statement.

Hemorrhoids are to be distinguished from certain other conditions which may occur in the anorectal region and which may for the lack of careful observation be mistaken for hemorrhoids. It is well to bear in mind that neither history nor any one symptom is sufficient evidence for the diagnosis. The symptoms if considered by themselves may often be misleading. Examination is so easy that one does not need to rely upon subjective evidence such as this when an abundance of definite visual evidence may be had upon examination: (Figs. 34, 35, and 36.)

The following named conditions may be mistaken for external hemorrhoids, particularly the thrombotic variety:

1. Condylomata.
2. Skin tabs.
3. Prolapsed polyp.
4. Prolapsed internal hemorrhoids.
5. Pruritus ani.
6. So-called "sentinel piles."
7. Procidentia.
8. Marginal abscess.
9. Fistula in ano.
10. Epithelioma of the anus.

Differentiation of these conditions may be clearly drawn if the following facts are borne in mind:

Condylomata are papillomatous, non-vascular masses arising from the skin surface by a well-defined base. These warty vegetations are firm to the touch and have a peculiar nodular, cauliflower appearance. They are of a white color and are distributed around the entire perianal region usually in large numbers. (Figs. 37, 38, and 39.) A Wassermann test is usually positive, as is also a specific history.

	External Thrombotic Hemorrhoid	Condylomata
Location	At anal margin confined to one side	Perianal skin over entire region
Consistency	Hard and smooth	Firm and warty
Character	Vascular	Fibrous
Color	Bluish	Gray-white
Bleeding	None	Occasionally
Pain	Great	Negligible
Number	Usually single	Usually very numerous
Shape	Oval or round	Warty
Pedicle	No	Yes
Attached to skin	No	Yes
Relation to skin	Under	On
Moisture	None	Much
Wassermann	Negative	Positive
History recent venereal disease	Negative	Positive
Illustrated by:	Fig. 36	Figs. 37, 38 and 39

Skin tabs are the most frequent confusing factor in arriving at a diagnosis of external hemorrhoids. Indeed, by many they are called hemorrhoids. They are in structure merely redundant folds of skin which in many instances have been

FIGS. 34-47.—PICTORIAL DIFFERENTIAL DIAGNOSIS OF EXTERNAL HEMORRHOIDS:

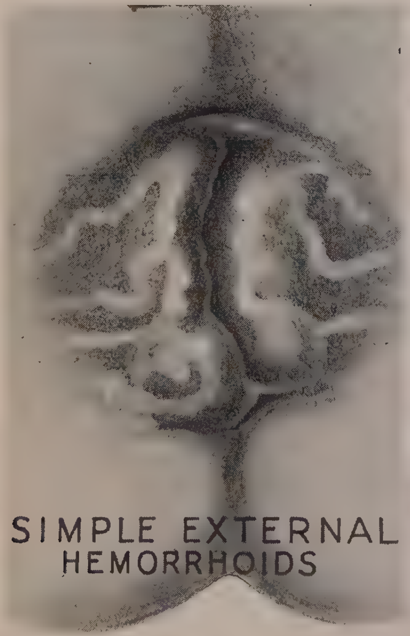


FIG. 34.—Simple external hemorrhoids.

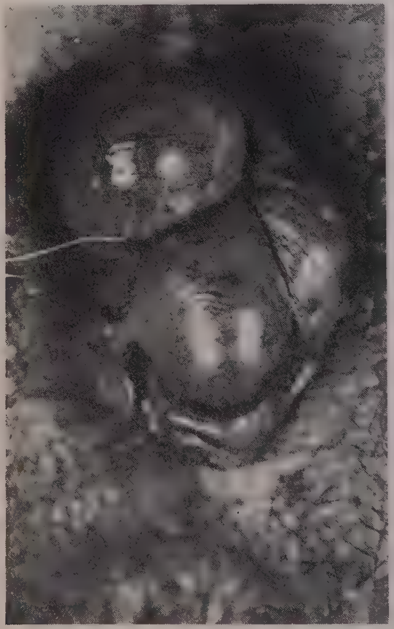


FIG. 35.—Inflamed external hemorrhoids.

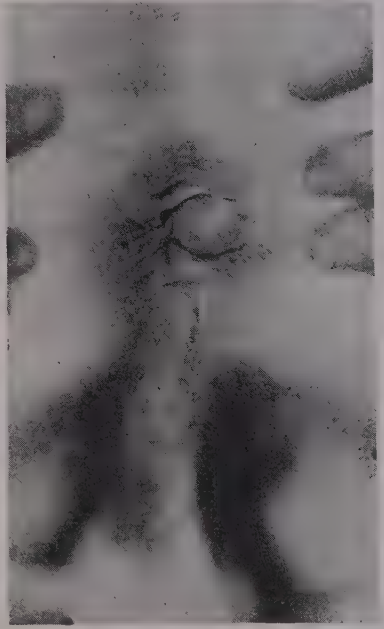


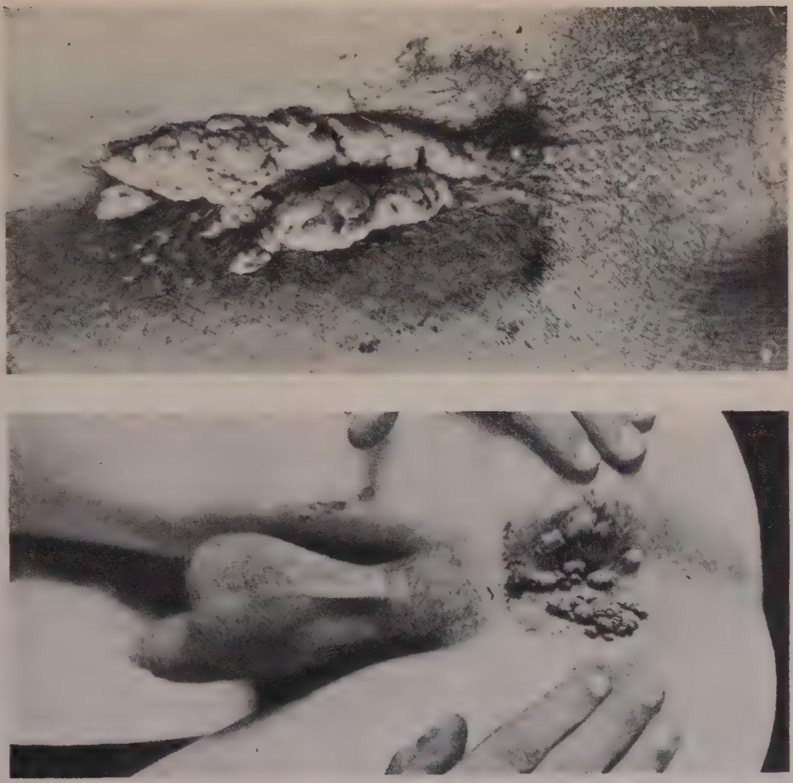
FIG. 36.—Thrombotic external hemorrhoids.

initiated by some previous attack of hemorrhoids, associated with edema. The edema during its existence overstretched the skin and upon subsiding left this redundancy in the anal integument. Such a tab is usually supplied with a small arteriole and venule, but the latter is not by any means varicosed. Judged, therefore, from the standpoint of its pathology, the skin tab is not a hemorrhoid. It is in appearance normal flesh-color and shows no dilated veins under its skin surface and is, moreover, usually of a resisting, if not actually firm, consistency. (Fig. 40.)

WHEN A POLYP PROLAPSES through the anal orifice, it may by virtue of its position appear to be an external hemorrhoid. However, it will be seen to be covered by mucosa, and the fact that it is readily replaceable through the anal orifice, of course, distinguishes it from an external hemorrhoid.

	External Thrombotic Hemorrhoids	Polyp Prolapsed
Location	Under perianal skin	In the anal lumen
Character	Flat or ovoid	Spherical fibrous
Consistency	Hard and smooth	Firm
Color	Blue	Red or white
Reducible	No	Yes
Bleeding	No	Occasionally
Pedicle	No	Yes
Illustrated by:	Fig. 36	Fig. 41

More confusing at times are, however, PROLAPSED INTERNAL HEMORRHOIDS. (Fig. 42.) The reason for this confusion is that the latter condition is often associated with a variable amount of eversion of the anal mucosa, so that in tracing the origin of the hemorrhoid, it may appear to be external to the anus. The mucosal covering of such a hemorrhoid and its relation superior to the white line of Hilton should be sufficient to establish its identity. The reducibility of the hemorrhoid through the anal orifice or the tracing of its origin will show it to be internal.



Figs. 37 and 38.—Condylomata acuminata.

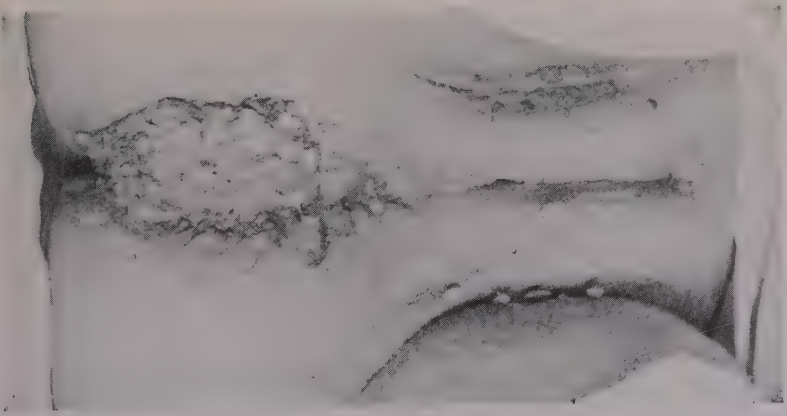


Fig. 39.—Condylomata lata.

	External Thrombotic Hemorrhoids	Prolapsed Internal Hemorrhoids
Location	Under perianal skin	In anal orifice
Color	Blue	Red
Reducible	No	Yes
Bleeding	No	Yes
Covered by	Skin	Mucosa
Pain	Great and constant	Moderate, occasional
Onset	Sudden	Gradual
Illustrated by:	Fig. 36	Fig. 42

Pruritus ani is often associated with external hemorrhoids, and a fine point in diagnosis thus arises as to whether we have a symptomatic anal pruritus due to the hemorrhoids or a clinical entity, pruritus ani. When the hypertrophic rugæ of the latter are present, differentiation is particularly difficult. However, the history is valuable here, as cases of pruritus ani are invariably of long standing and the itching of great intensity. Moreover, the rugæ are straight and radially arranged, whereas external hemorrhoids are arranged in a tortuous manner and are distinctly sacculated. Moreover, pruritus ani is notoriously nocturnal in its manifestations, whereas, external hemorrhoids, unless associated with this condition, have no such period of intensity.

	External Hemorrhoids	Pruritus Ani
Perianal Veins	Markedly varicose	Normal
Skin	Unchanged till late	Markedly thickened
Radial rugæ	None	Present
Excoriations	None	Many
Itching	Moderate or slight	Intense
Pigment	Increased	Greatly decreased
Illustrated by:	Fig. 34	Fig. 43

One condition very frequently termed external hemorrhoids is the so-called sentinel pile. (Figs. 44 and 45.) This is often associated with severe anal pain, and soreness, occasional slight bleeding, and often slight swelling in the region of the "sentinel pile." In truth, this structure is nothing more than a skin tab of a structure similar to that described above, but which has the

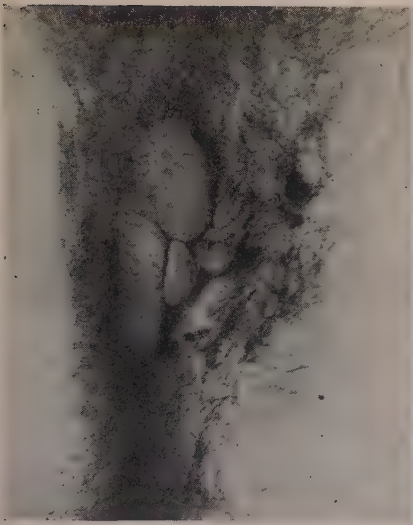


FIG. 40.—Skin tags.

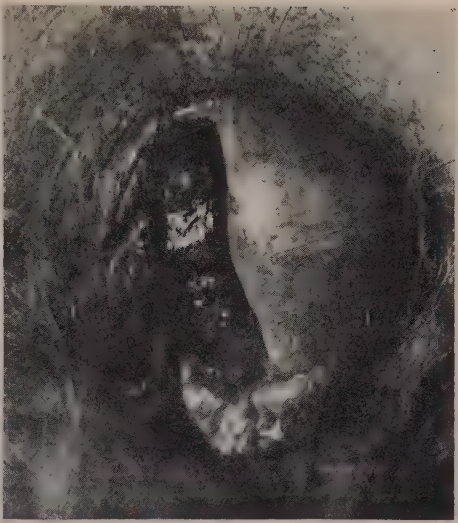


FIG. 42.—Protruding internal hemorrhoids.

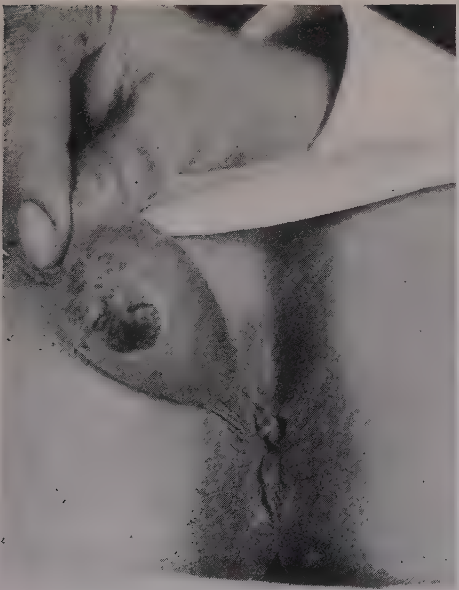


FIG. 41.—Polyp.

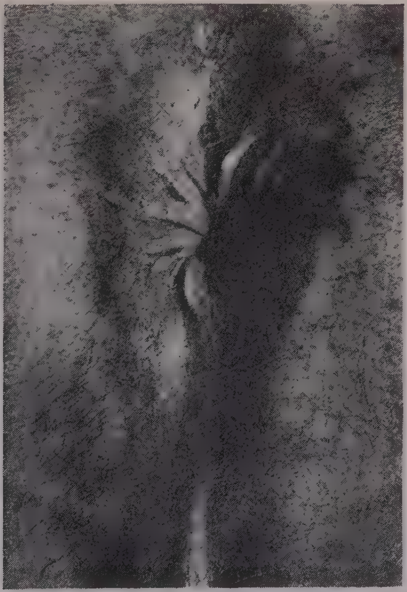


FIG. 43.—Skin changes of pruritus ani.

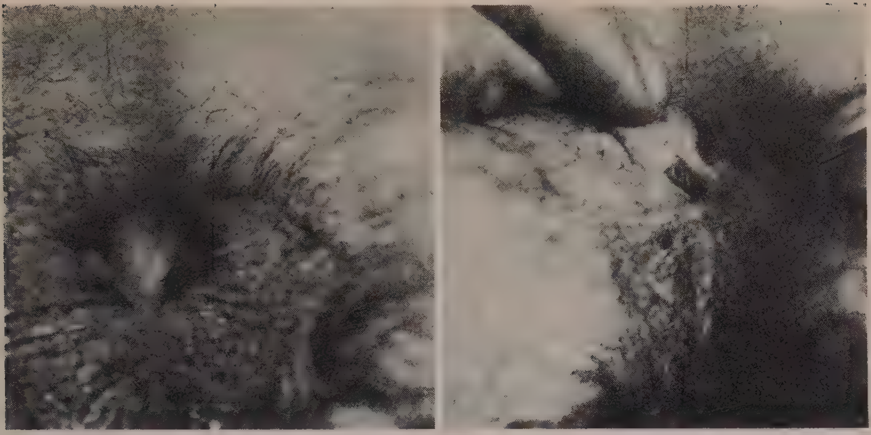
added attribute of being almost constantly associated with an anal fissure. It is usually located posteriorly, though occasionally in women it may be located anteriorly. If it is gently raised, what may be seen at its base as in Figure 45 is the anal fissure. It is thus readily to be distinguished from external hemorrhoids if the precaution is taken to examine it closely.

	External Thrombotic Hemorrhoids	"Sentinel Piles"
Origin	Under skin	From the skin
Nature	Vascular	Fibrous
Color	Blue	White
Pain	Constant and severe	None, except for pain of associated fissure.
Tenderness	Great	Slight
Location	Usually lateral	Usually posterior; occasionally anterior
Association with fissure	Occasionally	Always
Sphincter	Fairly normal	In spasm
Illustrated by:	Fig. 36	Figs. 44 and 45

Procidentia or true prolapse either of the anal mucosa or of the entire rectum can easily be differentiated by looking for the mucocutaneous margin. (Fig. 46.) It will be found that the prolapsed mass of tissue is all above this margin. Moreover, replacement is possible. There is no skin covering the prolapsed mucosa.

	External Thrombotic Hemorrhoids	Prolapse of Rectum
Location	Under perianal skin	In anal orifice
Reducible	No	Yes
Color	Blue	Red
Covered by	Skin	Mucosa
Pain	Severe and constant	Slight or none
Bleeding	No	Yes
Onset	Sudden	Gradual
Tenderness	Great	None
Concentric rugæ	Absent	Present
Illustrated by:	Fig. 36	Fig. 46

A small marginal abscess, by virtue of its position at the anal margin and of the pain associated with it, is occasionally



FIGS. 44 and 45.—"Sentinel pile."

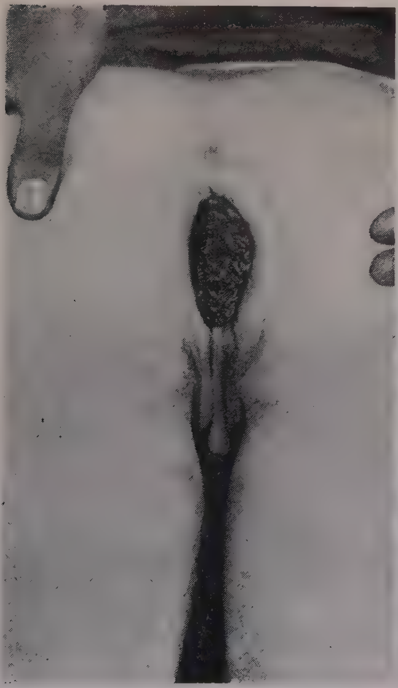


FIG. 46.—Prolapse of rectum.

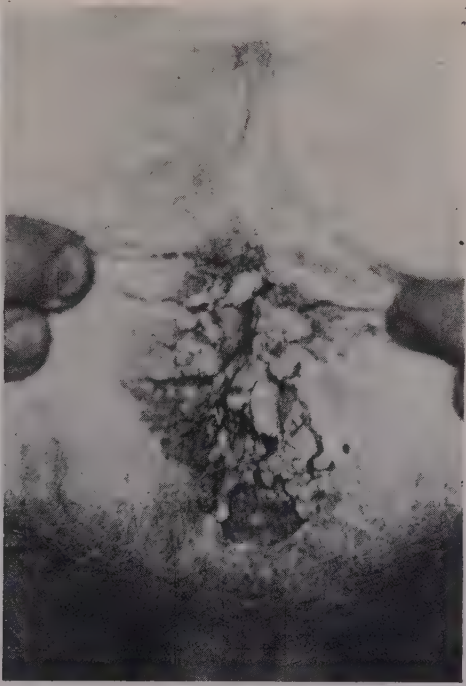


FIG. 47.—Epithelioma of anus.

mistaken for an external hemorrhoid. It may be differentiated by the induration and fluctuation which accompany abscess formation. A rise in temperature is also a valuable indication of abscess formation. Moreover, the character of the pain is usually throbbing. The swelling itself is firmly formed with a fluctuation centre and not vascular, as in the case of a simple external hemorrhoid, nor consistently formed, as in the case of a thrombotic external hemorrhoid.

	External Thrombotic Hemorrhoids	Marginal Abscess
Onset	Sudden	Over period of two or three days
Mass	Sharply defined	Indefinite induration
Color	Blue	Fiery red
Fever	None	Present
Fluctuation	None	Present late
Pointing	None	Present late
Resolution	Possible	Not possible
Pain	Steady	Throbbing

Occasionally the skin surrounding the external opening of a fistula will be so edematous and the granulation tissue at its mouth be so exuberant as to mislead one into thinking that he is dealing with ruptured thrombotic external hemorrhoids. However, the discharge of mucopurulent material from the centre of this and the demonstration of the fistulous tract with a probe, are sufficient to differentiate it from an external hemorrhoid.

	Ruptured Thrombotic External Hemorrhoid	Fistula in Ano
Previous history	Negative	History of previous abscess
Duration	Short	Of long standing.
Probe	Finds no tract	Discovers fistulous tract
Discharge	Clotted blood	Pus
Induration	None	Surrounding tract

Epithelioma of the anus is not a frequent confusing factor, but I am convinced that it is far more frequent than is commonly supposed. It has the general appearance of an epithelioma elsewhere. It is an excavated ulcer with heavy fungating granulations along its edge and associated with an area of induration around it. (Fig. 47.) A biopsy specimen taken from its edge will show typical epitheliomatous tissue. It is wise, therefore, to take such a specimen in the instance of any structure suspected of being an epithelioma.

	Ulcerated Thrombotic External Hemorrhoid	Epithelioma of Anus
Duration	Recent	Chronic
Pain	Usually severe	Moderate
Age	Usually young people	Over 40
Ulcer appearance	Shallow	Deep and excavated
Edge of ulcer	Edge thinned out	Edge thickened with granulations
Induration	Slight	Marked
Biopsy	Negative	Pathological picture of epithelioma

The following named conditions may be mistaken for internal hemorrhoids:

1. Rectal telangiectasis (so-called capillary hemorrhoid).
2. Rectal polyp.
3. Hypertrophied papillæ.
4. Papillary adenoma of the rectum.
5. Prolapse.
6. Carcinoma of the rectum.
7. Hypertrophy of the prostate.
8. Proctitis.

Rectal telangiectasis, or " capillary hemorrhoid," is an angiomatous condition similar in structure to that of various nævi found elsewhere in the body. The condition is not a true hemorrhoidal condition and cannot be treated as such. The differential diagnosis can only be made through inspection through a proctoscope, when the angiomatous mass will be seen as a brightened strawberry-like mass consisting of the excrescences of fine capillaries filled with bright-red blood.

	"Capillary Hemorrhoid" or Rectal Telangiectasis	Internal Hemorrhoid
Structures affected	Mucosal capillaries	Hemorrhoidal veins
Location	In mucosa	Under the mucosa
Pathological process	Telangiectasis	Varicosity
Color	Bright red	Bluish red
Form	Indefinite	Sharply defined
Appearance	Strawberry-like	Grape-like
Cause	Local irritation	Vascular defects
Bleeding	Oozing of light blood	Heavy flow of dark blood

Occasionally the ANAL PAPILLÆ, which in themselves are normal structures, are chronically inflamed, and are enlarged to such an extent as to be mistaken for internal hemorrhoids. The difference between these structures and internal hemorrhoids may be found in their point of origin at the mucocutaneous margin and their peculiar conical form, arising from a broad base. They are firm, white in color, and are usually multiple, arising from normal mucosa.

	Hypertrophied Anal Papillæ	Internal Hemorrhoids
Type	Normal structures	Abnormal
Nature	Non-vascular	Vascular
Color	White or pink	Bluish red
Location	At mucocutaneous junction	In upper anal canal
Appearance	Small conical tabs	Larger rounded swellings
Consistency	Firm	Soft
Illustrated by:	Fig. 49	Figs. 48 and 51

Benign growths of the rectum such as PAPILLARY ADENOMA frequently by their bleeding or protrusion are erroneously called hemorrhoids. Proctoscopic examination is the best guide. The adenomatous mass when traced to its source may be felt as a firm, finely nodular mass and may be seen to arise from a broad base and not to have any of the characteristics of internal hemorrhoids. Biopsy is, of course, indicated, as these masses have a tendency toward malignant changes.

	Papillary Adenoma	Hemorrhoids
Nature	New growth	Varicose veins
Feeling	Firm and finely nodular	Smooth and soft
Form	Easily defined by palpating finger	Indefinite to palpating finger
Biopsy	Shows structure of an adenoma	Shows varicose veins
Appearance	Finely nodular, pale-red mass	Smooth, bluish-red swellings
Number	Usually single	Usually multiple

Prolapse of the rectum is frequently mistaken for hemorrhoids. This is chiefly because of the protrusion found in prolapse. Inasmuch as many cases of prolapse are operated upon for hemorrhoids, the differential diagnosis is important. This is particularly true since the prolapse is certain not to be cured by any such operative procedure as is usually employed for the removal of hemorrhoids. If the difference is not detected prior to operation, it most certainly will be discovered later—much to the patient's discomfort and the surgeon's embarrassment. In these cases the mucosa protrudes liberally through the anal orifice, but the presence of circular concentric mucosal folds should be of assistance in differentiating the two conditions. In these cases the entire mucosa is involved and there are no distinct vascular lobular formations; bleeding and pain are relatively less than is the case in hemorrhoids, but the protrusion is much greater. Moreover, the sphincter has less tone as a rule when prolapse is present.

	Prolapsing Internal Hemorrhoids	Prolapse
Nature	Hemorrhoidal varicosity	A hernia of the rectum
Age	20 to 50	Very young or very old
Bleeding	Marked	Not marked
Protrusion	Relatively small	Very great
Appearance	Lobulated purple-red mass	Circular mass of mucosa showing no lobulations
Concentric folds	Absent	Present
Sphincter	Fair or good tone	Poor tone
Pain	Usually marked	Slight
Illustrated by:	Fig. 48	Fig. 53

It is pitiable indeed that CANCER OF THE RECTUM should be at times mistaken for a benign condition, such as hemorrhoids are. Digital examination alone might to the experienced finger tell the difference, since carcinomatous infiltration is firm, nodular, and friable, whereas, in the vast majority of cases, hemorrhoids cannot be definitely diagnosed by the digital examination. Therefore, the presence of any firm, nodular infiltration of the mucosa should be regarded with suspicion. A proctoscopic examination, however, eliminates all question as to the nature of the condition in question. The nodular, partially eroded and ulcerated surface of an annular carcinoma is quite a contrast to the soft, pliable, and discrete congested veins which constitute hemorrhoids. Biopsy, of course, should be done on every suspicious case, since by this means diagnosis may easily be established. As has been suggested in the chapter on " Examination," every case of hemorrhoids occurring in a person over thirty-five years of age should be studied by means of a barium enema in order to rule out the presence of a coincident carcinoma higher in the colon.

	Internal Hemorrhoids	Carcinoma of Rectum
Nature	Vascular	New growth
Age	Usually 20 to 50	Usually over 40
Palpation	Soft swellings	Firm nodular infiltration
Structures affected	Hemorrhoidal veins	Mucosa of rectum
Bleeding	Marked	Slight
Appearance	Congested mucosal swellings	Nodular ulcerated infiltration of rectal wall.
Barium enema	Negative	Shows obstructive lesion of bowel
Illustrated by:	Fig. 51	Fig. 50

Those physicians who rely upon digital examination for the diagnosis of hemorrhoids frequently mistake a HYPERTROPHIED PROSTATE for hemorrhoids. Hemorrhoids cannot be definitely diagnosed by digital examination by an experienced proctologist, so there is reason to doubt the ability of the general prac-

Figs. 48–53.—Pictorial Differential Diagnosis of Internal Hemorrhoids:

Fig. 48

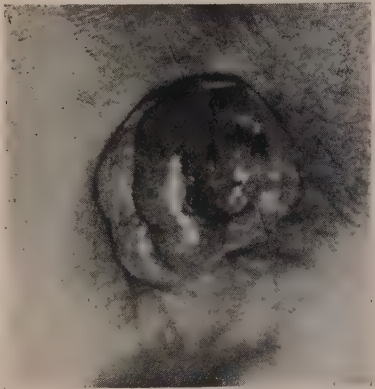


Fig. 49

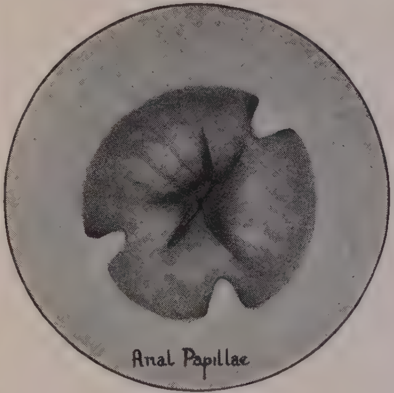


Fig. 50

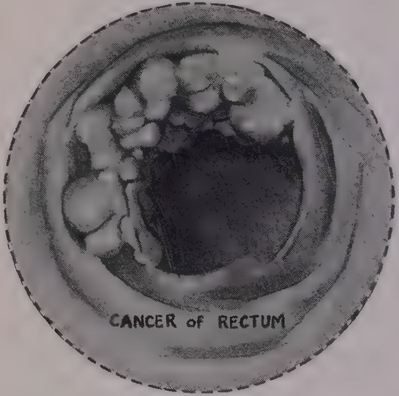


Fig. 51

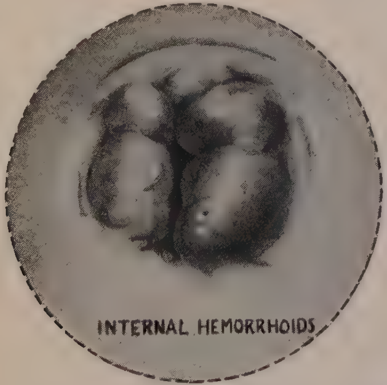


Fig. 52

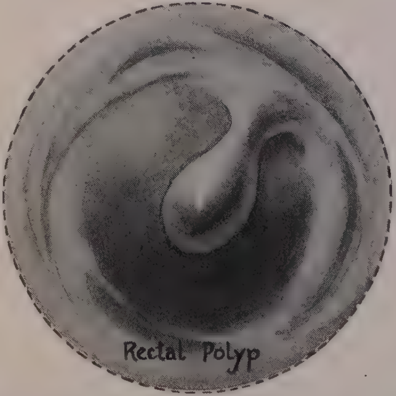


Fig 53

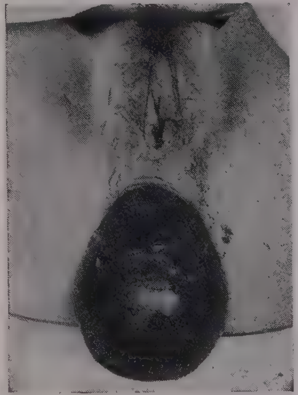


Figure 48.—Internal hemorrhoids, protruding. Figure 49.—Anal papillæ. Figure 50.—Cancer of rectum. Figure 51.—Internal hemorrhoids, *in situ*. Figure 52.—Polyp of rectum. Figure 53.—Prolapse.

titioner. It is far more reassuring and certainly safer from the standpoint of reputation to insert a proctoscope and see the condition directly. This error in diagnosis is inexcusable since the location of the swelling noted should inform one familiar with the anatomical position of a prostate. Regrettable as it is, such errors are made by careless physicians, and I know of cases which had been subjected to the injection treatment for hemorrhoids when there were none present. What wonder then that the injection treatment is at times maligned!

POLYP IN THE RECTUM is likely to be confused with a hemorrhoid. It will be noted, however, that it arises from a definite thin pedicle and is of a whitish color. Moreover, to the touch it has a firm fibrous feel which is in direct contrast to the soft, almost indistinguishable feeling of a true hemorrhoid.

	Internal Hemorrhoids	Polyp
Nature	Vascular	Fibrous
Pedicle	Absent	Present
Bleeding	Moderate to severe	Slight
Color	Bluish red	Whitish red
Shape	Lobulated swellings of the mucosa	Globular discreet mass
Structure	Dilated veins covered with mucosa	Fibrous tissue covered with mucosa
Illustrated by:	Fig. 51	Fig. 52

The bleeding and the mucus discharge incident to PROCTITIS occasionally lead to confusion and the wrong diagnosis of hemorrhoids. Proctoscopy will show the presence of a congested rectal mucosa covered with glairy mucus and oozing blood. There are no distinct swellings in the rectal mucosa. Moreover, hemorrhoids do not arise in the upper part of the rectum, but in the lower part of the ampulla.

The symptoms of rectal diseases, if considered by themselves, *as they certainly should not be*, may be misleading, but the following points of differentiation are to be noted.

PAIN.—The pain of hemorrhoids is a dull aching in the perianal region. The pain of fissure is sharp, sticking, aggravated during a bowel movement. The pain of marginal abscess is throbbing in character and is accompanied by fever.

Bleeding.—The bleeding of the hemorrhoids is usually light red in color and relatively large in amount. Hemorrhage from other sources, such as fissure, is usually but slight, and from conditions higher in the bowel is usually of a dark-red or tarry color. One must not be misled by the patient's story of having passed a "bowlful of blood," for the reason that even a small amount of blood will highly color an ordinary flushing bowl.

Protrusion.—Protrusion of hemorrhoids is usually accompanied with severe pain and soreness. That of prolapse is not usually very painful and is generally described by the patient as being as if "the whole rectum fell out." A protrusion of a polyp usually gives but little pain, except in so far as it excites sphincter spasm.

CHAPTER IX

THE ETIOLOGY OF HEMORRHOIDS

The explanation usually advanced as to the cause of the condition known as "hemorrhoids" is that certain conditions, chief among which are the upright position assumed by man, the force of gravity, and an anatomical defect in man, namely, the lack of valves in the hemorrhoidal vein, all conspire to cause hemorrhoids. This answer appears to be less ensconced on definite supporting data than it is encumbered with the mould of text-book opinions. In consideration of the data submitted below, it will be readily seen that these explanations are mere false suppositious generalizations, and though these factors may have a secondary importance, they are by no means primary fundamentals.

Let us consider first that explanation which sets forth the upright position of man as the primary cause in the formation of hemorrhoids among human beings. It must be conceded that in these United States there is a total population of 110,000,000 people. It is also axiomatic that nearly all of these people assume the erect attitude during the active part of their existence. If, then, the primary cause of hemorrhoids were the mere position of man, one could logically expect that practically the entire population would have fully developed hemorrhoids. The fact in the matter, however, is that but a relatively small percentage of the population is so afflicted. It is very evident that the argument advanced that the upright position of man is the cause of hemorrhoid formation is not tenable.

Or to view this matter in a more clinical aspect; it will be conceded that the condition known as " hemorrhoids " has a tendency to occur in successive generations within the same family. If, then, the primary cause rested in the assumption of the erect attitude and, as must be admitted, the defect is hereditary, there is no doubt whatever that during the ages required for the development of the human race, ample time and anatomical opportunity would have been afforded for an almost complete universal distribution of the condition. Obviously these two propositions stated above reduce themselves to absurdities, and we are led to the conclusion that the cause is less generic and more specific.

Let us see what the other common explanation has to offer. This explanation sets forth the theory that owing to the lack of valves in the hemorrhoidal veins, varicosities of these veins result and these are known clinically as " hemorrhoids." That this theory is equally absurd becomes apparent when we consider the fact that there are many small veins of the size of the hemorrhoidal veins throughout the body which are equally deficient in valves. Indeed, there are many large vessels which are not supplied with valves. Piersol, in his text-book of anatomy, mentions the fact that the entire portal vein and all its branches are devoid of valves, similarly that the azygos, the venæ cavæ, and the cerebral veins are equally deficient in this respect. Yet the fact remains that conditions analogous to " hemorrhoids " do not develop in these regions.

On the other hand, there are at least three veins which are admittedly supplied with valves in which varicosities similar to those occurring in the hemorrhoidal veins do develop. These are the esophageal, the spermatic, and the saphenous. All of these, as is well known, are susceptible to varicose formation.

I am quite conscious of the fact that the argument heretofore advanced in support both of the influence of the upright position of man and of the lack of valves in the hemorrhoidal veins is that they are supposed to exert this influence through the agency of gravity. Yet this in itself is not a sound argument when one considers the fact that the force of gravity affects all persons to an equal extent and, moreover, affects both sides of the body in an equal degree. The fact that the left spermatic vein is affected in a far greater proportion than the right, and that varicosity of the saphenous vein is often unilateral, would, to my mind, relegate the influence of gravity to a very subsidiary or accessory value. The only supporting observation with any pretension to being a scientifically reasoned out theory is that quoted by Mummery in his book, "Diseases of the Rectum and Colon." This states:

"Piles are one of the penalties we pay for the erect posture. One of the chief reasons for this is the anatomy of the part. There are three main groups of veins, which all anastomose more or less intimately round the anal canal. The main plexus of veins lies immediately beneath the mucous membrane, between it and the muscular coat of the anal canal. The main artery of the rectum is the superior hemorrhoidal, which runs down in the mesorectum, and divides at the upper level of the rectum into two branches, which run parallel with the wall of the bowel, and anastomose lower down with the middle and inferior hemorrhoidal arteries, which come down from the iliac arteries and supply mainly the tissues outside the bowel wall. Of the three main groups of veins, the most important is the one running with the superior hemorrhoidal artery. These veins run more or less up the bowel from this plexus and drain directly into the portal system. The inferior mesenteric vein is a branch of the portal system, the veins running with the inferior hemorrhoidal artery and the veins running along the perineum drain into the system through the inferior iliac veins. The portal vein contains no valves.

" So it is obvious that in an ordinary human being standing upright there is a column of blood, the length of which is equal to the distance between the skin of the anus and the liver or the dome of the diaphragm. As there are no valves, there is a fair amount of pressure at the lower end of that column when the person is standing. The reason why we suffer from piles is because of the blood in this branch of the plexus having to go into the portal system. A further reason is that, obviously, anything in the way of congestion of the liver or anything which causes increased intra-abdominal tension, such as overloading of the bowel, will cause a certain amount of pressure on the inferior hemorrhoidal veins."

From this we might suppose that the venous channel from the anus to the liver is a fairly straight tubular structure of uniform diameter. But this, as will be apparent upon little reflection, is not true to fact. The fact in the matter is that the venous channels are extremely sinuous in their course, and the diameter of these vessels increases as they approach the liver. It is a matter of simple mechanics to see that the force of fluid in such a series of tubes is distributed proportionately evenly throughout their winding course, and this causes the pressure of this fluid to be distributed on the walls of the tubes in direct proportion to their diameter. Thus the smaller the tube the less the pressure from contained fluid. Since there is relatively less blood in any one of the very small veins which constitute the lower portion of the venous vascular tree, it is not under any undue pressure merely because of the upright position.

Moreover, the explanation just quoted presupposes the existence of a stationary column of blood—a supposition obviously contrary to fact. It will be agreed that instead of a stationary column of blood, we have one which is moving upwards at a definite rate, partially in response to pressure from below, and to a certain extent in response to the aspiratory action of the permanent negative pressure above in the thorax. This column of venous blood is therefore ascending against the force of gravity by virtue of the transmitted power of the heart's action. Regardless of the level of the venous system under consideration, this driving power is sufficient not only to support the column of blood, but also to cause it to move upward against the force of gravity. Even if the veins of the portal system were supplied with valves, they would in a normal person forever remain functionless, irrespective of the upright position and the force of gravity. From a purely mechanical and physiological aspect, therefore, the supposition of a stationary column is proven a fallacy and, at least to my mind, the supposed primary influencing factor of gravity is disproven.

And we ever return to the indisputable fact that though we are all constituted anatomically similar and that gravity is impartial in its effect, yet only a relatively small percentage of the total population develops hemorrhoids.

Other than the various mechanical theories of hemorrhoidal formation there are two which I believe deserve mention. The first of these states that hemorrhoids are a true new growth of vascular tissue. Thus the great Virchow stated that he observed a similarity between hemorrhoids and a certain type of tumors (angiomata). Later another investigator, Reinbach, believed that he observed a new growth of blood-vessels in every one of his sections made from a series of fifteen cases. There being no inflammatory changes (according to Reinbach) in any of these sections, the obvious conclusion to which he hastened is that his findings, the constant new growth of the vessels, indicated that hemorrhoids were not varicose in nature at all, but were true tumors of the angiomatous type.

The author just quoted is the only one who ever found the new growth of blood-vessels such a conspicuous and constant feature of hemorrhoidal histology. Many other investigators have found it to be a comparatively infrequent and, when present, limited feature. My own observations on this point have been in complete consonance with the latter. With them I interpret the occasional, limited new growth of capillaries as a response to inflammatory processes the occurrence of which is inevitable in instances where hemorrhoids exist for any great length of time. Indeed it is only in very chronic hemorrhoids that this new growth of blood-vessels is to be noted at all. In view of the foregoing, *i.e.,* the relative infrequency and inconstancy of new growth of blood-vessels in hemorrhoidal tissue and the total absence of such new growth in the vast majority of hemorrhoids, we must conclude that such new growth of blood-vessels is, when present, merely a result or accompaniment and not a cause of hemorrhoid formation.

Another theory advanced to explain the production of hemorrhoids is that of Quénu. This author stated that the process is due to an endophlebitis brought on by direct, local infection through the epithelium or mucosa. The endophlebitis causes a fibrous degeneration of the entire vein wall, with resulting loss of elasticity and dilatation of the vessels. If this is proposed as an explanation of the primary cause of all cases of hemorrhoids then it is rapidly refuted by the fact that in almost none of the hemorrhoids are any changes whatever shown in the endothelium. Moreover, although it will be granted that fibrous degeneration in the media does occur, it will be observed that infection is by no means the only agency through which this may be induced. Then, too, tissue changes reactive to infection are by no means constant lesions, though they are fairly common. However, in those instances where they are present it can be fairly well proven to have occurred after the hemorrhoid had been formed. It is obvious, therefore, that infection could not have been the primary factor in hemorrhoid production.

Rather akin to this theory, but nevertheless distinctive from it, is the "infective theory." This states that in a certain percentage of cases the formation of hemorrhoids is due to infection by certain micro-organisms such as *B. coli* and *Staphylococcus albus.* The following observations are typical of some of the data advanced in support of this theory: "Pure cultures of *B. coli* were grown from blood aspirated from the hemorrhoid" and "the internal hemorrhoid was inflamed and prolapsed though non-strangulated, and here again *B. coli* in pure culture was obtained from the aspirated blood." Again speaking of "two other specimens, both harbored *B. coli* and one had *Staphylococcus albus.*" Such supporting data are so grotesque that they make the theory they purport to prove positively absurd. To hear that infected blood aspirated from a part of the general circulation (a hemorrhoidal vein) proved infection of that vein one would think that Harvey had never lived. Either that particular patient had septicemia or, what is more probable, the needle was contaminated in its passage through the non-sterile mucosa. In either event nothing whatever is proved in respect to the infective causation of hemorrhoids. For lack of rational and scientifically correct data in support of this theory we cannot extend it further consideration. This statement does not deny the existence of a hemorrhoid whose mucosal covering or even whose superficial interstitium has become secondarily infected. The occurrence of such infection is acknowledged.

But even in the instance of such a hemorrhoid, blood circulating in its vessels will be found sterile.

One cannot, however, lightly dismiss the question as to the cause of hemorrhoids and still do justice to it. Nor can, as has been set forth in previous paragraphs, the usual explanations be considered quite sufficient to afford a complete explanation. When one considers the fact that we are all constituted anatomically similar, that is with valveless hemorrhoidal veins, and that we all walk upright, or nearly so, one can hardly reconcile these conditions with the indisputable fact that not every person develops this condition. On the ruins of these disproven explanations, however, what are we going to build?

It must seem evident that a closer examination of the observations and data at our command is necessary in order to arrive at a logical conclusion and one which will explain each and every case. It is my opinion that a broader etiological basis will be established than has heretofore been stated.

In casting about for this broader etiological basis, the factor of hereditary tendency toward varicosity strikes one as most important. For example, consider the observations presented herewith relative to the coincidence of other varicose conditions with the hemorrhoidal conditions. In a series of one hundred and eighty-eight consecutive cases observed in private practice or at the Rectal Clinic, University and Bellevue Hospital Medical College, the following data were obtained and are herewith tabulated:

Table I

Name	Age	Sex	Occupation S—Sedentary A—Active	Other Varices Present	Family History of Hemorrhoids	Family History of Varices
F.H.D.	31	F	S	+	—	+
E.K.	52	M	A	+	+	+
E.M.H.	36	M	S	—	—	—
J.D.C.	44	F	S	—	—	+
L.C.B.	29	F	S	+	+	—
E.R.O'D	67	M	S	—	—	+
H.E.H.	43	M	A	—	—	—
N.E.F.	56	F	S	—	+	+
B.G.S.	22	M	A	+	+	+
A.C.M.	63	M	A	—	—	—
A.S.	34	F	S	+	—	+
M.O'F.	26	M	A	—	+	+
A.B.H.	51	F	S	+	—	—
I.T.M.	47	M	A	—	+	—
B.L.S.	39	F	S	+	—	+
L.P.	28	F	A	—	—	—
E.R.	24	M	S	—	—	—
I.D.G.	52	M	A	+	+	+
M.F.C.	38	F	A	—	—	—
I.V.H.	27	M	A	+	—	+
G.R.	46	M	A	+	+	+
R.M.	56	F	S	—	+	—
E.M.C.	42	F	S	+	+	+
C.E.R.	49	M	S	—	—	+
C.O'C.	28	F	S	—	+	+
M.E.S.	61	M	A	+	—	—
M.S.	22	M	A	+	—	+
I.E.H.	23	F	S	—	+	+
C.B.	36	M	A	—	—	—
K.S.	60	F	S	—	—	+
W.P.W.	35	F	A	+	+	+
M.J.B.	46	M	S	—	—	—
M.S.	25	M	A	—	—	—
F.T.	41	F	S	—	+	+
K.G.H.	50	M	A	+	—	+
J.S.	28	M	S	—	—	—
E.G.H.	49	M	S	+	+	—
M.C.F.	34	M	A	+	—	+
A.M.C.	45	F	S	—	—	—
M.L.S.	28	M	A	—	+	—

Name	Age	Sex	Occupation S—Sedentary A—Active	Other Varices Present	Family History of Hemorrhoids	Family History of Varices
J.A.McL.	78	F	S	—	—	—
M.B.H.	40	F	S	+	+	+
L.E.	54	M	A	—	—	—
L.A.M.	39	M	S	—	—	+
R.O.T.	42	F	S	—	+	—
B.C.S.	24	M	A	—	—	—
M.E.F.	51	M	A	—	—	+
M.R.	20	F	S	—	+	+
E.McN.	47	M	A	+	+	—
H.H.	71	M	S	—	—	—
F.J.B.	36	M	A	+	—	+
H.R.	41	F	A	—	+	—
L.LaP.	27	F	S	—	—	—
C.E.G.	56	F	S	+	—	+
G.A.C.	46	M	S	—	+	—
A.D.S.	24	M	A	+	—	+
R.F.D.	64	F	S	—	—	+
W.T.	39	M	A	—	+	—
A.E.H.	71	F	S	—	—	—
L.F.	47	F	A	—	+	—
A.D.	38	M	A	+	—	+
B.G.S.	26	M	S	+	+	+
E.M.F.	52	F	A	—	+	—
A.A.C.	44	M	A	+	—	+
M.E.S.	57	M	S	—	—	—
W.G.H.	28	M	A	—	—	—
M.D.	40	F	S	—	+	+
P.J.O'C.	32	M	A	+	—	—
C.P.L.	24	F	S	—	—	+
H.G.H.	46	M	A	—	—	—
M.L.H.	40	M	S	—	—	+
R.S.	59	M	A	+	—	—
N.T.A.	24	F	S	—	+	—
J.V.F.	49	M	S	—	+	+
J.W.W.	37	M	A	—	—	—
E.L.	52	F	S	—	—	—
M.A.B.	26	M	S	—	+	+
A.M.S.	44	M	S	—	—	—
H.G.	31	F	S	—	—	+
M.T.	70	F	A	+	—	+
A.R.	33	F	S	—	—	—

Name	Age	Sex	Occupation S—Sedentary A—Active	Other Varices Present	Family History of Hemorrhoids	Family History of Varices
J.L.	27	M	S	+	—	+
K.H.E.	45	M	A	—	+	+
G.Z.	40	M	S	—	—	—
I.F.C.	29	F	A	+	—	+
M.E.S.	19	M	A	+	+	—
L.B.E.	35	M	S	—	—	—
M.F.	48	F	A	—	—	—
J.J.S.	22	F	S	+	—	+
C.E.deS.	54	M	A	—	+	—
J.J.Mc.	35	F	A	+	—	—
A.R.	26	M	S	—	+	+
E.E.J.	44	F	S	+	+	+
L.F.	56	F	S	—	—	+
H.R.	46	M	A	—	+	—
C.M.J.	22	M	A	—	+	+
A.M.	44	F	S	+	—	—
M.R.	29	M	A	—	+	+
A.B.McA.	52	M	S	—	—	—
J.H.J.	21	M	S	+	+	+
M.G.	46	F	S	—	—	—
M.H.C.	32	M	A	—	—	+
A.E.M.	26	F	S	+	+	+
C.A.F.	72	M	A	—	—	—
O.H.P.	41	M	A	+	—	+
H.G.	26	F	S	—	—	—
B.A.B.	47	M	A	—	+	+
E.M.S.	36	F	S	—	+	+
A.G.	29	M	A	+	+	+
M.W.R.	42	F	S	—	—	—
A.M.	37	F	S	—	+	+
S.L.G.	28	M	A	+	—	—
C.E.W.	41	M	S	—	—	+
C.R.	54	M	A	+	—	—
E.G.	34	F	S	—	—	—
J.W.	45	F	S	—	—	—
I. DeF.	18	M	S	—	+	+
V.S.	38	F	S	—	—	—
C.Z.	40	M	A	+	—	+
H.M.	37	M	S	—	+	—
A.T.H.	54	F	A	—	—	+
E.L.E.	42	M	S	—	—	+

Name	Age	Sex	Occupation S—Sedentary A—Active	Other Varices Present	Family History of Hemorrhoids	Family History of Varices
L.C.S.	51	M	A	+	—	+
C.P.McC.	24	F	S	—	+	—
C.A.S.	49	M	A	+	—	—
J.A.H.	28	F	S	—	+	+
H.F.B.	44	F	S	—	—	—
F.W.S.	39	M	A	+	+	—
H.S.W.	42	F	A	—	—	+
W.S.T.	28	M	S	—	+	+
J.C.C.	56	F	S	+	—	—
J.E.B.	40	M	S	+	—	+
E.D.J.	26	M	S	—	+	+
T.K.S.	34	F	A	+	—	—
L.P.	41	F	S	—	—	+
E.E.M.	27	M	A	—	—	—
W.M.T,	52	F	S	—	+	+
E.D.L.	47	M	A	+	—	—
R.B.G.	22	F	S	—	+	—
G.B.E.	62	M	A	—	—	+
I.J.C.	38	M	S	+	+	+
F.J.O'C.	48	M	A	—	—	—
F.B.	42	M	A	+	—	+
D.F.C.	36	M	S	—	+	—
C.M.J.	52	F	A	—	—	+
W.R.W.	44	M	S	—	+	—
E.C.S.	28	F	S	+	+	+
F.O.	58	M	S	+	—	—
I.W.T.	38	M	A	+	—	+
M.L.	64	F	S	—	+	—
L.K.	22	F	S	+	—	+
H.J.B.	46	M	A	—	+	+
F.I.B.	24	M	A	+	—	—
G.F.Z.	40	F	S	—	+	—
J.D.M.	24	F	A	+	—	+
R.D.C.	43	M	S	—	+	+
E.A.H.	39	M	A	—	—	—
G.H.S.	22	F	S	—	—	+
W.E.D.	40	M	S	—	—	+
N.H.	37	F	S	—	+	—
N.B.F.	26	M	A	+	—	+
G.T.	41	F	A	—	—	+
B.S.C.	51	M	S	—	+	—

Name	Age	Sex	Occupation S—Sedentary A—Active	Other Varices Present	Family History of Hemorrhoids	Family History of Varices
H.C.B.	27	M	A	—	—	—
N.J.	44	M	S	—	+	+
E.F.L.	38	M	A	+	—	+
C.R.	62	M	S	—	—	—
H.D.McI.	29	F	S	—	+	—
J.R.Y.	53	M	A	+	—	+
C.S.	41	M	S	—	—	+
H.C.H.	39	M	A	+	+	—
J.G.	26	F	S	—	+	—
A.A.E.	42	F	S	—	+	—
L.A.C.	46	M	A	—	+	+
B.L.	25	M	S	+	—	—
C.H.	50	M	A	—	—	+
C.J.H.	31	F	S	—	+	+
E.W.F.	45	F	S	+	—	—
W.B.D.	22	M	A	—	+	+
J.A.M.	55	M	S	—	—	+
C.D.S.	32	F	S	—	—	+
H.D.	49	F	A	+	—	—
R.A.R.	27	F	S	—	+	—
S.M.C.	70	M	A	—	—	+
J.L.	43	M	S	+	—	—
E.C.H.	29	M	S	—	+	—
W.B.L.	54	M	A	+	—	—
H.C.	47	M	A	—	—	+
				35%	39%	51%

To summarize the data furnished above, it will be noted that in the 188 cases observed, the age incidence was as follows:

Decades	
1st (0–9)	0 per cent.
2nd (10–19)	1 per cent.
3rd (20–29)	27 per cent.
4th (30–39)	18 per cent.
5th (40–49)	30 per cent.
6th (50–59)	14 per cent.
7th (60–69)	4 per cent.
8th (70–79)	3 per cent.
Fractions	3 per cent.
	100 per cent.

In this series of cases it will be observed that a little over 55 per cent. of the patients had sedentary occupations, while a little over 44 per cent. had active occupations. There were 58 per cent. males and 41 per cent. females.

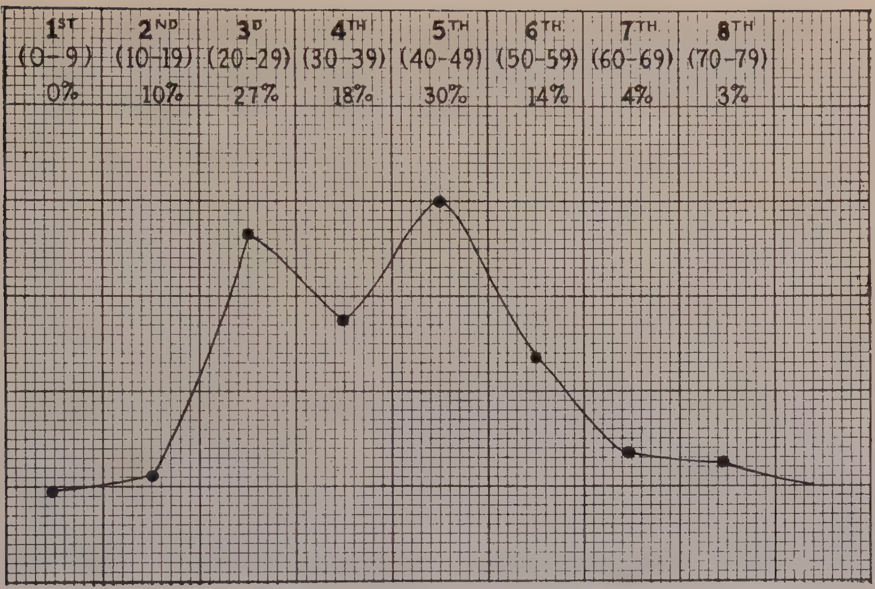
From the above table, one may observe that in a definite percentage of cases there was a family history either of hemorrhoids or of some varicose condition pathologically similar to hemorrhoids somewhere else in the body. This tends to confirm the more or less common observation that the disease often affects members of the same family and tends to follow successive generations. The logical conclusion is not, however, that hemorrhoids are hereditary, but rather that there is inherited a structural weakness of the venous system which, under the exciting cause of increased blood-pressure or general atony of the body tissues, results in a giving way of the hereditarily weak venous structures.

Pathologically, this condition becomes evident as varicosity, and depending upon the particular veins affected, various clinical names are assigned to it. Despite the difference in these clinical names, it must be borne in mind that, pathologically, they are all fundamentally alike. The converse of this proposition appears to be equally confirmed. Thus, in a series of cases which presented themselves for varicose conditions other than hemorrhoids, rectal examination showed the presence of hemorrhoids, though usually in a quiescent or incipient stage.

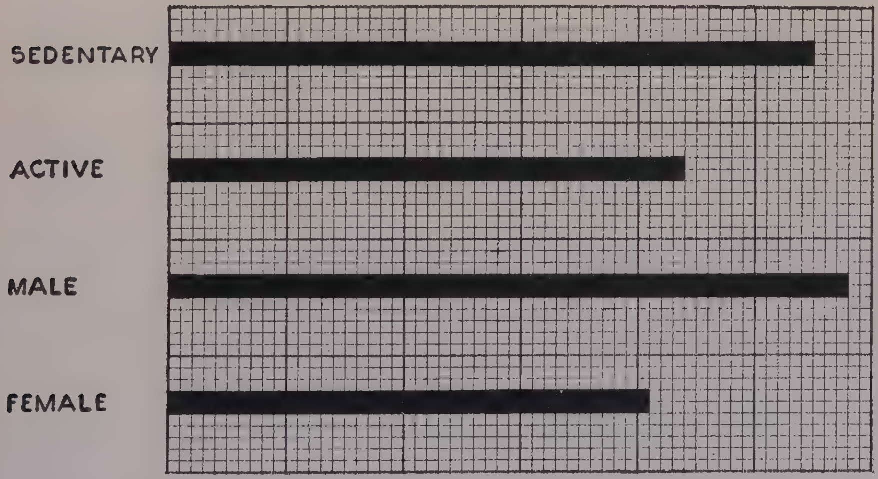
Table II

VL—Varicose veins of the leg.
VC—Varicocele.
OeV—Œsophageal varices.
VBL—Varices of the broad ligament.
F—Female.
M—Male.

Name	Age	Sex	Varicose Condition Present	Hemorrhoids	Family History Varicosity
C.R.C.	46	M	VL	—	+
M.P.	27	M	VC	—	—
A.V.M.	45	F	VL	+	+
A.S.F.	52	M	VL	—	—
F.B.O	31	M	VC	—	+
R.R.	52	F	VL	+	—
W.H.B.	47	M	VBL	+	+
F.A.S.	39	F	VL	—	—
A.C.	28	M	VC	—	+
K.M.V.	60	F	VL	+	—
H.C.McI.	36	M	VC	—	+
M.I.T.	48	M	OeV	+	+
T.J.R.	26	M	VC	—	—
D.B.	42	F	VL	—	+
W.F.C.	46	F	VL	+	+
L.M.M.	52	F	VL	—	—
W.J.A.	22	M	VC	—	+
M.M.C.	51	F	VL	+	—
H.F.	58	M	VL	+	+
L.R.McC.	40	M	VL	—	—
G.H.	51	M	VL	—	+
R.S.G.	42	M	VL	—	+
H.A.O'C.	28	M	VC	+	—
S.K	38	F	VL	—	+
S.S.	47	M	VL	—	+
H.M.R.	50	F	VL	—	—
H.B.B.	46	F	VL	+	+
G.M.P.	52	M	VL	+	+
W.H.S.	56	F	VL	—	—
A.T.	41	F	VL	—	+
A.K.	29	M	VC	+	—
W.E.C.	45	M	VL	+	+
J.R.	52	F	VL	—	—
P.C.C.	50	M	VL	—	+
W.C.	61	F	VL	—	+
J.A.G.	50	F	VL	—	—
F.P.	32	M	VC	+	+



AGE INCIDENCE BY DECADES



INFLUENCE OF OCCUPATION AND SEX ON INCIDENCE

Name	Age	Sex	Varicose Condition Present	Hemorrhoids	Family History Varicosity
I.F.S.	26	M	VC	−	−
I.V.B.	53	F	VL	−	+
W.P.S.	48	F	VL	+	+
A.W.	52	M	VL	−	−
J.P.H.	45	M	VL	+	+
A.B.F.	53	F	VL	−	−
M.J.	30	M	VC	−	+
E.D.P.	45	F	VL	−	+
J.W.B.	54	F	VL	+	−
S.J.	50	F	VL	−	+
W.C.D.	46	M	VL	−	−
F.A.O.	44	F	VL	−	+
C.S.J.	52	M	VL	+	+
W.A.	45	F	OeV	+	−
J.S.J.	59	F	VL	−	−
M.W.B.	44	M	VL	−	+
C.R.H.	41	F	VL	−	+
E.E.S.	43	M	VL	−	−
R.L.A.	36	M	VL	+	+
W.W.	24	M	VC	+	+
C.D.Q.	63	F	VL	−	−
I.M.U.	54	F	VL	−	+
J.E.W.	35	F	VBL	+	+
R.P.	52	F	VL	−	−
J.N.M.	46	M	VL	−	+
D.W.	40	F	VL	+	+
F.C.D.	37	M	VC	−	−
D.J.	40	M	VL	−	+
L.DeL.	37	F	VL	+	+
C.E.T.	49	M	VL	−	−
P.B.B.	52	F	OeV	−	+
S.L.S.	31	F	VC	+	−
J.H.B.	63	F	VL	−	+
D.O'L.	32	M	VC	+	−
F.W.S	38	F	VL	+	+
P.E.J.	45	F	VBL	−	+
C.A.H.	62	F	VL	−	+
E.K.	29	M	VC	−	−
S.B.M.	40	F	VL	+	+
J.R.	22	M	VC	−	−
S.W.S.	42	F	VL	−	+
E.B.	44	M	VL	−	−

Name	Age	Sex	Varicose Condition Present	Hemorrhoids	Family History Varicosity
F.B.	45	F	VL	+	+
B.O'N.	56	M	VL	+	—
W.P.M.	37	F	VL	+	—
N.L.B.	44	F	VL	—	+
D.M.	30	M	VC	+	+
C.S.	51	M	VL	—	+
J.C.W.	24	M	VC	—	+
A.G.	63	F	VL	—	—
J.C.S.	37	F	VL	+	+
F.C.L.	59	M	VL	—	—
L.A.	49	M	OeV	+	+
J.S.	54	M	VL	—	+
G.L.P.	60	F	VL	—	—
E.H.M.	38	F	VL	+	+
V.C.	61	M	VL	—	—
F.K.	55	F	VL	+	—
M.S.	49	F	VL	—	+
J.A.P.	31	M	VC	—	+
M.S.	42	F	VL	+	+
L.M.	58	M	VL	—	—
A.A.B.	54	F	VL	—	+
A.K.	39	M	VL	+	+
S.A.R.	51	M	VL	+	—
M.J.F.	36	F	VL	+	+
A.B.A.	22	M	VC	—	+
J.F.	42	M	VL	+	+
H.Y.	30	F	VC	—	—
F.J.O'B.	48	M	VL	+	—
M.R.H.	40	F	VL	—	+
E.R.	56	F	VL	—	—
W.B.J.	26	M	VC	—	+
H.W.	23	M	VC	+	+
F.R.O.	41	M	VL	+	—
E.M.E.	43	M	VL	—	+
J.P.T.	52	F	VL	—	—
T.F.C.	20	M	VC	+	+
B.Z.	60	F	VL	—	—
J.W.P.	52	F	VL	—	+
R.W.A.	48	M	VL	+	—

Total cases observed—118.

Cases in which hemorrhoids were coincident with another varicose condition—46 (39 per cent.).

Cases in which there was a family history of varicosity—70 (59 per cent.).

Cases in which there was both a coincidence of hemorrhoids and a family history of varicosity—28 (23 per cent.).

In the above series it will be noted an equal number of males and females have been compared in order to eliminate whatever influence the sex factor might have upon the matter of heredity.

To sum up, therefore, the part that heredity plays in the causation of this condition: The actual pathological condition is not subject to hereditary transmission. At least, from the data available, no such conclusion can be logically drawn. There is abundant evidence, however, to confirm the statement that *a weakness of the vascular tissue may be inherited.*

Proceeding, therefore, with the understanding that one of the fundamental factors in the production of hemorrhoids may be the inheritance of a specific structural defect in the vascular system, it becomes evident that an acquired general state of weakness (asthenia) may also be transmitted to the offspring. In the presence of such a condition, any one of the physiological systems may, in time, give way under the stress and strain of bodily activity. If the particular system affected happens to be the vascular system, the result is the same as if this had been the specific inherited defect. (Fig. 54, a and b.)

In instances where there is no family history of varicose conditions, the occurrence of these, and more particularly the occurrence of hemorrhoids, is to be explained by the incidence of degenerative changes within the blood-vessels as a consequence of an overstrain of this system.

Let us see if clinical facts fit in with this view. There are two periods of life when hemorrhoids most frequently occur. These are during the third and fifth decades, and it will be noted that both of these facts are readily explainable on the basis heretofore mentioned.

Thus maturity is reached by both sexes during the third decade, and this starts the period of youthful maturity, which is in all the individual's lifetime the age of fullest physical activity—in work, in athletic play, and in sex. It is this high tide of activity which throws a strain on every organ and tissue in the body, and with the presence of hereditarily weak tissues the defect promptly becomes evident. It is thus that we explain the occurrence of hemorrhoids in young active people.

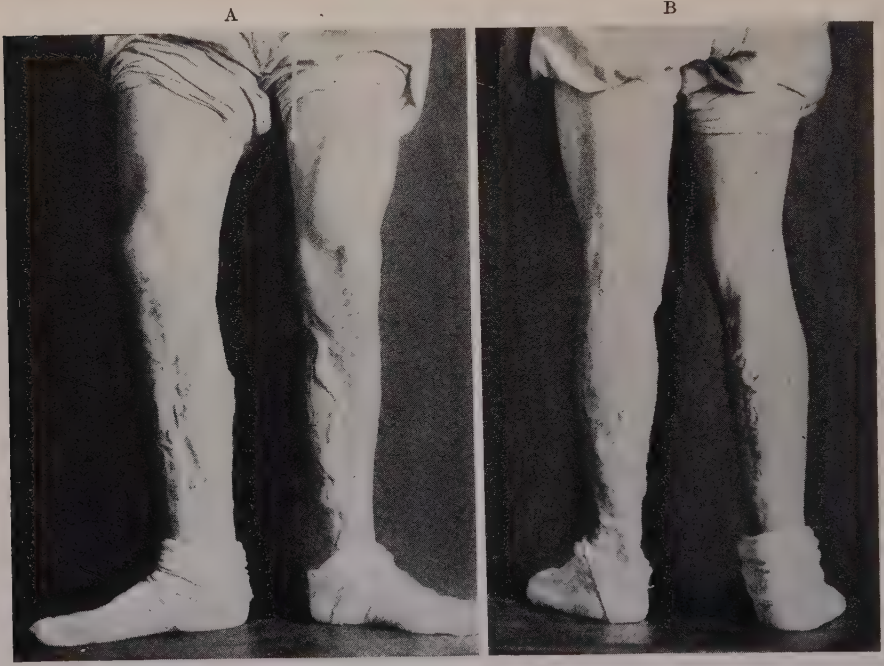


FIG. 54.—Varicose veins of legs.

The fifth decade of life is, on the other hand, a period of decreasing virility and is accompanied by great changes in the entire organism. Some of these are functional, as is the case in the ovarian and testicular internal secretions. The occurrence of a critical period in the life of women about this time of life is a commonly accepted belief, and in response to the statements and theories of Mendel and others, it is becoming more generally accepted that the male experiences a similar critical period of from one to four years, in which a sudden and rapid deterioration of the whole organism occurs, though this is usually only of a temporary nature. According to Mendel, this seems to be a critical period identical with that experienced by women. It begins with gastric and cardiovascular disturbances, but affects all other systems in a varying degree. In reality, this is a prelude to a period of decadence of the organism, and it physiologically follows maturity. It is part of the natural decline of every living being and inevitably ends in complete disorganization—death.

The occurrence, therefore, of a degenerative process such as hemorrhoids during this period of life seems a most logical occurrence. Occupational strains, emotional strains and others, have a cumulative effect, and it is during the decline in physiological tonus which affects equally all the tissues of the body that the vascular system is the first to be affected, owing to its incessant activity.

Involution may be aggravated and hastened by many other causes of decay to which our flesh is heir. In such cases, however, senility is a morbid condition, not a function of age, and may be noted before the close of maturity, and in such an event is pathological. The whole arterial system loses its elasticity in old age. This diminished elasticity is a regular feature of senility and comprises the whole circulatory system, arteries, capillaries, veins, and heart.

To return now to the two periods when hemorrhoids are of a most frequent occurrence. The explanation of the frequency of occurrence during the fifth decade is not on the basis of hereditary defect. In this instance the activity from forty to fifty years of life has had a most telling effect upon the vascular system, and during the normal decline in physiological tonus the vascular system, owing to its incessant activity, is usually the first to be affected.

Aside, however, from the predispositions heretofore mentioned, which are attributable to heredity on one hand or a general weakening of the tissues on the other, there are definite exciting causes. Chief among these are the habits of overeating and, to a lesser extent, overdrinking of stimulating liquids; habits which seem to be fungi to civilization. It is quite generally agreed that civilized man eats far more than his physiological requirements would necessitate. Such a practice leads to a plethoric engorgement of the portal system, and this system in a perfectly physiological manner attempts to adjust itself and relieve the portal plethora by means of redistribution of the blood volume. In doing this, the hemorrhoidal veins and esophageal veins are the channels through which blood may escape into the general vascular system. In bearing the brunt of this function which devolves upon them, they become enlarged, tortuous, and dilated—in other words, varicose in the manner which, in the instance of the hemorrhoidal veins, we designate clinically as hemorrhoids. There can be no doubt, therefore, as to the very important part played by overeating and overdrinking. Indeed, a careful history will, in many instances, show that an orgy of eating or drinking preceded the attack for which the patient presents himself to the physician.

To be quite sure, the fact that man of today is far less robust and muscularly active than his caveman ancestors is an explanation which contains considerable truth. Within our own times, we may observe that men accustomed to living a rough primeval life involving considerable muscular activity, as well as the subsistence on a coarse diet, are rarely troubled with this condition. Thus, it was said to be unknown among the Indian tribes and certain other primitive peoples. Muscular action is efficient in preventing this condition in two ways: first, by raising the physiological requirements for food so that overeating does not occur so readily; and second, and more important, is the fact that in a life of muscular activity there is no chance for portal plethora or venous engorgement elsewhere in the body. The return of venous blood to the right side of the heart is dependent far more upon muscular activity than upon the head pressure in the arterial system. This is for the reason that muscular contraction expresses the blood from the veins and favors its delivery to the right auricle. Then, too, increased activity on the part of the muscles requires increased blood supply to these muscles, so that, all in all, a more even distribution of the blood volume is attained than is possible in those pursuing a sedentary life. As must be obvious, however, those who must pursue a sedentary occupation can, if they will, avoid the consequences heretofore mentioned by a very simple process of not eating any more than their physiological requirements.

We have spoken at length on the errors in quantity which man makes in his diet. Criticism, however, can be brought with quite as much justice against his quality of diet. There is no doubt that the refined foods upon which man lives today, and particularly those artificial aids to a lagging appetite which he has contrived and used for many years past, namely, condiments, contribute very largely to the production of abnormal gastro-intestinal conditions. They induce chronic dilatation of the intestinal mucosal vessels, mucosal plethora, and finally portal plethora, with its resulting chronic passive congestion of the intestines. There is absolutely no need of the many highly spiced mixtures which are used in food today. Their only function is to evoke a pseudo-appetite, an abnormal craving for food which the mind desires, but which the body most certainly does not require.

As a sequel to certain other factors mentioned heretofore, that is, overeating, faulty selection of food, and lack of normal exercise, man is subject to a condition not found elsewhere in the animal kingdom, except in certain animals which he has domesticated and which must suffer with him the luxury of civilized living. This condition is known as constipation or as antithesis diarrhea. Both of these conditions are evidences of abnormal gastro-intestinal conditions. While they are in themselves symptoms, yet by their persistence, they assume the rôle, at least clinically, of definite conditions. The inevitable result is not only a locally increased blood-pressure due to engorgement of the portal system, but also to an increased abdominal pressure, incident to attempts at defecation, *i.e.,* straining at stool. These in themselves are most potent factors in the formation and progression of the hemorrhoidal state.

One of the most flagrant, if not the most frequent, exciting causes of hemorrhoid formation is the abuse of cathartics. This group of medicines are legitimate therapeutic agents only when definitely indicated, and a physician is the best judge of that. Self-medication has, however, because of insistent advertising suggestions, become so universal, particularly in respect to cathartics, that a very considerable percentage of people are victims of this habit. Since it leads to further constipation, and is productive of much local mucosal irritation and congestion, there is but little doubt as to its rôle in hemorrhoid production. In the instance of some of the more irritating cathartics, they may actually be the primary cause of hemorrhoid formation.

While discussing the cathartic question, mention of the prevalent popular cathartics must be made. Of all the self-medication fads with which the public has ever been exploited the present mineral oil or agar-agar emulsion in mineral oil is certainly the least harmful and most effective. In fact, the fad is, in my opinion, a most fortunate and commendable one. The emulsion mentioned acts mechanically, of course, and hence there can be no question of drug action. Moreover, there is no danger of habit formation—other than the habit of regularity in the act of defecation. And this is indeed laudable.

Seeking further for causes of hemorrhoid formation, it becomes quite manifest that any condition which will increase the pressure within the portal system, that is, induce portal plethora, will have a tendency to have its greatest effect at the most vulnerable point, namely, the submucosal veins, of which the hemorrhoidal veins are a part. Thus heart disease, particularly the form involving the right side of the heart, tends to have this effect. Where channels of anastomosis are successfully established, pressure in the hemorrhoidal vein may not be quite so great as to cause varicosity. But in many other instances, unfortunately, this does not occur. Similarly, in liver disease of the type where the portal venous flow is partially obstructed, portal plethora is also induced. It must not be supposed that the hemorrhoidal veins are the only ones to be affected. Indeed there is abundant clinical evidence to the contrary. Thus in portal cirrhosis (multilobular, Lænnec's or venous cirrhosis, chronic interstitial hepatitis, hobnail or whisky-drinkers' liver) hematemesis occurs due to the rupture of an esophageal varix or varicose veins in the stomach. Similarly, melena occurs from bleeding into the colon. Actual hemorrhoid formation is for this reason relatively infrequent. But the fact remains, that when the hemorrhoidal vessels are affected, they are more promptly and more frequently noticed than a varicose condition elsewhere along the gastro-intestinal tract. This is partly due to their ready accessibility, and partly to the fact that varicose veins at that point are more liable to injury than elsewhere. Then, too, the sensory supply of the anal canal is cerebrospinal, whereas the nerve supply of the gastro-intestinal tube above this point is sympathetic, and hence practically devoid of sensory supply.

Increased intra-abdominal pressure is another factor of great importance in the production of hemorrhoids. This may be continuous, as in the presence of pelvic tumors, or in pregnancy, or it may be incidental, as in the case of constipation or of chronic coughing or in the case of attempts at micturition where a stricture of the urethra or a hypertrophied prostate is present. In these conditions the mesenteric vessels, and with them their branches, the hemorrhoidals, are prevented from emptying themselves normally, and this condition, if long continued, results in varicosity of the hemorrhoidal veins.

Influence of Occupation

Much incongruous and grossly inconsistent matter has been written concerning the influence of occupations upon the occurrence of hemorrhoids. One may read in almost any of the current text-books on rectal diseases that they are the result of a sedentary life and within the next paragraph that they are the result of strenuous occupations. When choosing between two such diametrically opposed statements as these, it is difficult to conclude exactly what happy medium of activity is required to avert the occurrence of hemorrhoids. It is bad logic and extremely poor science to generalize on a few cases and give a list of occupations, the followers of which happened to have had hemorrhoids. Statements such as these do not help us to understand wherein the particular occupation under discussion exerts its influence and, moreover, they cloud the issue of a true cause. The same may be said in reference to climate and sex.

If, however, we make a general classification of occupations into either active or sedentary, it will be generally found that the majority have a sedentary occupation. In my own series it will be noted that 55 per cent. were of this character. It will be further noted, though, that this is not a striking preponderance, and when we consider the fact that we are a sedentary race, rather than an actively laboring one, the importance of the difference is open to question. Then, too, there are so many variable factors in the equation, that I am frank to admit that I can arrive at no definite conclusions in the matter of a general law respecting the influence of occupation in the production of hemorrhoids. In isolated cases, we can with reasonable assurance conclude that an occupation such as one requiring heavy lifting or continuous standing has been responsible for that particular case, but a general rule does not appear possible. In any event, I am firmly of the opinion that such influence as occupation may possibly have is more often of a secondary rather than a primary nature.

Influence of Climate

I believe that the same may be said of the influence of climate. Thus it has been claimed that hemorrhoids occur more frequently in tropical or semi-tropical countries. Though no data supportive of this contention have ever been advanced, yet the explanation is given that, owing to the greater incidence of certain forms of colitis in these regions, hemorrhoids develop. In cases where hemorrhoids coexist with colitis, conclusions must not be too hastily reached as to the relations of these two conditions. Thus while the chronic mucosal congestion accompanying a colitis certainly may in time induce hemorrhoid formation, yet aside from a specific infective colitis, it will be more often found that both the hemorrhoids and the colitis are secondary to some other more basic condition.

Influence of Sex

Judged by the statistics available, it would seem that men are affected much more frequently than women. Thus most authors claim that hemorrhoids are approximately twice as frequent in males. I cannot concur in this view, and recommend consideration of the facts that women are usually more reticent about this particular ailment than men are; moreover, women do not readily complain of hemorrhoids since they are more indifferent to the loss of blood owing to the fact that they are accustomed to the periodical loss during menstruation; finally, many women are treated by gynecologists and hence are never seen by those from whom these statistics usually come, *i.e.*, general surgeons. In my own series, there were 41 per cent. females, so that, although the males were in the majority, yet the usual ratio of 2:1 did not hold good. Of course, it will be readily admitted that the series is much too small to warrant any extensive generalizations. The observations presented, together with others made elsewhere, are, however, sufficient to raise the question as to the value of loosely collected statistics and deductions based thereon.

Influence of Age

As will be observed in the series of cases shown in Table I, the greatest incidence in respect to age was during the third, fourth, and fifth decades. This is approximately similar to generally accepted statistics. My explanation for this relatively greater incidence during these life periods is that in the third decade the stress and strain of active physical life brings out whatever hereditary weaknesses may exist in the vascular tissue; in the fifth weakness in this tissue is more likely to be the result of overstrain acquired incident to the duties of occupation, physical activity, and the natural advance of senile changes in all of the tissues in the body. The vascular tissue being the most active of these, and the venous portion of it being the less robust, changes in it are noted in advance of other changes. Those cases which occur in the fourth decade may be incidental to either a hereditary predisposition or an acquired weakness due to overstrain or senile changes.

I will quote the following figures based on 3700 consecutive cases of rectal ailments, 3007 of which were hemorrhoids. They are taken from the records of Dr. Collier F. Martin, who has kindly allowed that privilege. It will be noted that in general the age incidence is similar to that observed in my own series. The difference noted is a relatively greater per cent. of cases in the fourth decade. While my own experience has not been in accord with this preponderance of males (2:1), yet this series is so much larger than my own, that I believe the law of average has had more opportunity to exert its influence than in my own. I am, therefore, of the opinion that Doctor Martin's figures give a more correct estimate of the probabilities than mine.

Statistical Review of Thirty-seven Hundred Consecutive Cases of Rectal Diseases

(Taken from the Private Records of Dr. Collier F. Martin)

Decades	Total Cases		Internal Hemorrhoids		External Hemorrhoids	
	Males	Females	Males	Females	Males	Females
1st (0–9)	16	10				
2nd (10–19)	33	9	4	0	6	1
3rd (20–29)	376	184	160	73	85	42
4th (30–39)	801	337	434	187	184	92
5th (40–49)	650	307	408	185	177	109
6th (50–59)	411	183	274	117	117	56
7th (60–69)	192	74	112	41	38	27
8th (70–79)	54	26	27	10	6	3
9th (80–89)	1	3				
Unknown	22	11	10	9	9	4

Total Males—2556. Total Females—1144. Total Cases—3700.

In drawing conclusions as to the influence of age upon the occurrence of hemorrhoids, it is well to bear in mind that hemorrhoids are not always brought to the physician's attention at the instance of their first manifestation. More often patients procrastinate for a length of time varying from months to years. In the latter instance it is hardly correct to form statistics on the basis of their first visit to the physician. Moreover, hemorrhoids may be present for a considerable length of time without the patient being actively aware of their presence. These and other variable factors must be borne in mind when forming statistics on the subject, or when drawing conclusions from them.

I am, therefore, not quite so sure as to the value of statistics concerning this malady, and certainly am of the opinion that as they now stand they furnish no clue as to the ultimate etiology. Taken in a broad general sense, the sum total of our statistics seems to point to the following: Hemorrhoids are an ailment of relatively frequent occurrence. *They are, however, not as frequently present as they are diagnosed.* They are apparently slightly more prevalent in the male sex. They appear to be more frequent during the life periods third, fourth, and fifth decades. These are the only generalizations which I believe to be of practical value in the maze of statistics on the subject.

Résumé of Etiological Factors

To recount briefly those conditions and circumstances which may be considered as the causes of hemorrhoid formation: There may be a predisposing weakness in the structure of the venous vessels. This predisposition may be in the nature of a hereditary defect of the vascular tissues, particularly the veins. Thus we note in Table I, that in 39 per cent. of the series, there was a family history of hemorrhoids, and in 51 per cent., a family history of other varices. On the other hand, this defect may be of a degenerative nature of the vascular tissues induced by either stress and strain of active physical life or as a part of a general process of approaching senility. As exciting factors one may note chronic mucosal congestion, the result of the habitual use of cathartics or the accompaniment of errors in diet, overeating, overdrinking, or the pathological conditions of constipation, diarrhea, or colitis. Portal plethora, the result of diseased conditions of the heart, liver, or intestines, may likewise be an exciting factor. As accessories to this portal plethora, certain extrinsic mechanical interferences, as in pregnancy, or where large tumors press upon the venous trunks, may be mentioned. Abnormal intra-abdominal pressure resulting from stricture of the urethra, the presence of a hypertrophied prostate, or from constipation, is a potent factor in hemorrhoid formation.

Etiological Factors
- Predisposing
  - Defect—hereditary weakness of vascular tissue.
  - Degenerative—senile changes.
- Exciting
  - Chronic mucosal congestion—errors in food, habitual use of cathartics, constipation, diarrhea, colitis.
  - Portal plethora—diseases of heart, liver, intestines.
  - Abnormal intra-abdominal pressure
    - (1) constipation
    - (2) stricture, hypertrophied prostate
    - (3) prolonged coughing
    - (4) straining at defecation.
  - Mechanical extrinsic interference—pregnancy, tumors.

CHAPTER X

GENERAL REMARKS ON THE TREATMENT OF HEMORRHOIDS

Having identified the ailment under consideration as being a case of hemorrhoids and having classified it in accordance with the classification heretofore described, the matter of treatment is next to be decided upon. This varies, of course, not only as to the type of hemorrhoids we are dealing with, that is, external or internal, but also as to the changes which have occurred within the hemorrhoidal structure. Such changes may be of the nature of a complication, as, for instance, rupture of the varicosity with extravasation into the surrounding tissue and thrombosis of the extravasated blood, or it may be in the nature of a progression of the natural changes occurring within these structures in an effort at spontaneous cure.

The treatment of simple uncomplicated external hemorrhoids that show no changes within the hemorrhoidal mass should be largely prophylactic, that is, regulation of diet so as to avoid constipation and the use of some inert lubricant such as mineral oil to afford easy defecation. The injection method is, in this instance, most decidedly contraindicated for the reason that it is invariably followed by sloughing or abscess formation with or without associated fistulæ. Operation is never necessary in the treatment of simple external hemorrhoids.

When changes have occurred within the external hemorrhoid to such an extent that they constitute redundant rugæ, the presence of which is a source of annoyance to the patient either by interfering with local sanitation or by giving rise to anal pruritus, they should be surgically removed under local anesthesia. In still another case, we see external hemorrhoids which are extremely edematous and inflamed, as in Figure 35, and the question often arises as to whether one should proceed to operative treatment at this moment or bide his time until the edema and acute inflammation have subsided.

Experience has shown that we are entirely justified in operating immediately upon such a condition and that we may, by following the procedure outlined, expect excellent results despite existing inflammation, for by the removal of an ordinary inflamed external hemorrhoid, we furnish an open wound which serves as a drain for the edematous tissue. The latter will not become infected if the open character of the wound is maintained by proper dressings.

If, however, in another instance the external hemorrhoids are complicated by the presence of thrombosis or rupture with extravasation or edema, then there is no question as to the treatment to be followed. Immediate surgical intervention is the only logical course to pursue.

The treatment of internal hemorrhoids to be decided upon in any given case depends upon the condition which exists in the hemorrhoidal mass. In uncomplicated internal hemorrhoids, it is my opinion that either one of the operative procedures to be described or one of the injection treatments to be described may be considered of equal value. The case must be an uncomplicated case; that is absolutely essential. With this limitation, however, I do not hesitate to treat cases of internal hemorrhoids by means of the injection method of treatment, for I know that I can accomplish a rapid and certain obliteration of the hemorrhoids without discomfort to the patient and, what is more important, without causing him to lose time from his employment. Moreover, I do not have to remove that spirit of apprehension which seems to be the invariable response of every patient to a suggestion of operative treatment. While I am aware that enthusiasts of this method claim absolutely no recurrence, yet I am not so blind to the facts which I have observed, both in my own practice and in that of others whom it has been my privilege to review, but that I realize recurrence may take place. But what of it? If, after three to five years of complete relief a patient returns complaining of a recurrence, the very fact that he returns proves that he has been satisfied with the treatment and is willing to undergo the procedure once more. Should the recurrent case be found to be one with complications, operation can be performed without any difficulty by reason of the previous injection treatment.

It is in this type of case, *i.e.,* uncomplicated internal hemorrhoids, that the radium seed method or the various electrotherapeutic measures are permissible. These methods have the advantage of being methods which, while they are not operative, do not require the injection of a possibly harmful chemical substance into the rectum. Although the dangers of the latter are, in my opinion, greatly exaggerated, yet such dangers must be considered as possibilities. Often, too, the patient is too well informed on the subject of his complaint to listen to reason. He knows of friends who have been successfully treated by electricity or some other method and hence insists on this method. While I think the final judgment as to appropriate treatment in a case should be left to the doctor, yet the wishes of the patient must be considered. This must be done if we are to save ourselves the embarrassment of appearing hypocritical. Practically every physician whom I have had as a patient has volunteered his preference for some particular treatment, usually non-operative. And said doctor would probably have felt very disconcerted if I had arbitrarily refused to treat him by any other method than the one he suggested. So we must be considerate in our attitude toward the lay patient.

In complicated cases of hemorrhoids, there is but one method which can be considered certain, safe, and efficient, and that is the method of surgical intervention, either by ligature and excision or by the clamp and cautery method. In the majority of cases, the ligature and excision method is to be preferred, since it is the more surgically exact of the two. Hemorrhage will never occur if this operation is properly done. If the use of a "rectal plug" be omitted, reflex anuria will not often occur, nor when it does occur will it ever be a troublesome feature. Some surgeons prefer the clamp and cautery method, but I reserve its use for those cases in which ulceration or inflammation is present. It is a rapid, easy method and usually gives good results. Most patients complain less of pain postoperatively when the ligature method is used. When using the clamp and cautery method, moreover, one can never be absolutely certain that hemorrhage will not occur. And when it does occur, it is usually a serious problem to deal with. The use of a slow cherry-red cautery rather than a rapid white-hot cautery is the best means of obviating this feature.

To state in a very definite and concise manner exactly what are the principles governing adequate treatment of any given case of hemorrhoids, the following tabulation is presented:

The Adequate Treatment of Hemorrhoids

- External
  - Simple
    - General physical examination to determine the cause.
    - Mineral oil as a fecal lubricant.
    - Proper habits of diet, drinking, and living.
    - Other prophylactic measures suggested.
  - Complicated
    - Inflamed
      - Palliation with Montague position.
      - Surgical removal under local anesthesia.
    - Thrombotic—Immediate surgical evacuation of clot and packing.
    - Ruptured—Ligation of vein ends and packing.
- Internal
  - Simple
    - Injection treatment.
    - Electrotherapeutic measures.
    - Hydrotherapeutic measures.
    - Radium seed method.
    - Operative measures.
    - Dietetic measures.
  - Complicated
    - Inflamed—Ligature with excision operation or clamp and cautery operation.
    - Prolapsed—Ligature with excision operation.
    - Ulcerated—Clamp and cautery operation or ligature with excision operation.
    - Thrombosed or Gangrenous
      - Clamp and cautery or ligature with excision operation.

CHAPTER XI

THE PROPHYLACTIC TREATMENT OF HEMORRHOIDS

IT MAY seem, especially to one who happens to be consulting these pages for guidance in the matter of a case awaiting treatment, a trifle late and a bit absurd to speak of the prevention of hemorrhoids after they have occurred. Yet there *are* certain dietetic and pharmaceutical measures whose employment can prevent to a large degree a progression or aggravation of existing hemorrhoids, and a knowledge of these is certainly of value. This is particularly the case where treatment of an active nature is refused or, by circumstances, prevented. It must also be admitted that the rigorous observation of prophylactic measures following active treatment, whether this be the injection or operative treatment, will be of much value in reducing to a minimum whatever possibility there may be of recurrence.

One of the chief means of preventing hemorrhoids or, in the event that they have already formed, of avoiding their aggravation is by the maintenance of a proper diet. While the diet in any one particular case must of course be modified to conform with individual needs, since not all patients have the same food requirements or tastes, yet there are certain basic principles which may guide the physician in this respect. We may have an error in quantity as well as quality of diet. Inasmuch as the former is the more important we shall discuss it first.

Although physiologists have accurately determined the number of calories required by a man of average weight doing light, moderate, or heavy work, yet the calorie system is not of much practical value to either doctor or patient, since the doctor is often quite as uninformed on the subject as the patient is indifferent. Without, therefore, attempting to reduce the matter to a mathematical nicety, the doctor can estimate and the patient himself surely knows whether he habitually overeats. A comparison of the patient's weight with the standard for his height will readily indicate the trend of his eating habits. The patient's own statement as to these will furnish further guidance. These data, when considered in relation to physiological requirements, will be sufficient to determine whether or not too much food is eaten. It will be interesting to note how prevalent the habit of overeating is. Since overdrinking of alcoholic liquors may indirectly be productive of hemorrhoids it is well to establish this point. The obvious suggestions, therefore, in respect to quantity of food to be eaten are that overeating and overdrinking be avoided.

Quality of diet is a matter of importance. The most important suggestion in this regard is the almost complete abstinence from condiments, since they induce an artificial appetite, the satisfaction of which leads to overeating. Moreover, the appetite aroused is chiefly for the protein foods, such as meat. When these constitute a large share of the diet constipation results, and this is admittedly a potent factor in causing many cases of hemorrhoids. Furthermore, condiments, when used habitually, not only induce visceral disorders, such as of the liver and kidneys, but also induce a chronic congestion of the colonic and rectal mucosa which may initiate hemorrhoid formation.

Other than spices the next most important items to avoid, at least in excess, are the protein foods, of which red meats are the best examples. These have a decided constipating effect, and it is for this reason that they should be avoided. In a similar manner other foods which have, at least for the individual, a known constipating effect should be taken in but small quantities. As such may be mentioned milk, cheese, cocoa, and foods prepared from them or with them. Of course if bulky foods be taken with these, some laxity in this respect is permissible. These then are, in general, the articles of diet to avoid: constipating foods and spices. What are to be taken?

Fruits in season and fresh vegetables are certainly of abundant enough variety to furnish the basis for a substantial diet for anyone, regardless of whether he is sedentary or active in his occupation. The use of whole-wheat bread, Graham bread, and many of the popular breakfast foods containing bran is to be recommended. The use of plain bran is not nearly as satisfactory as when the bran is mixed with other foods, since it has a tendency to accumulate in the colon. I have seen several cases in which bran has actually led to the impaction of feces. This can be avoided, as has been stated, by the use of bran mixed with other foods. The same effect, that is, an increase in the bulk of intestinal residue, may be obtained by the use of agar-agar flakes such as are procurable in any pharmacy.

One element of diet that is notoriously neglected is that of water. The sufficient or insufficient use of this simple substance is indeed in many instances the difference between normal bowel function and constipation. The ingestion of at least a quart of water a day is to be urged upon patients with any tendency toward constipation.

A potent factor in the maintenance of normal bowel function—and this in truth is of the highest importance in the prophylaxis of hemorrhoids—is the matter of regularity of habits of eating and of defecation. The importance of precise regularity in the performance of both of these functions should be thoroughly impressed upon the patient.

As a mechanical aid to defecation, the use of mineral oil has, with good reason, long been popular. More recently, various suspensions of agar-agar in mineral oil have been offered to the medical profession, and while on theoretical grounds, the combination appears ideal, yet practical observations do not seem to show any superiority over plain mineral oil of proper viscosity. I believe that the routine use of mineral oil is the best preventive of hemorrhoids available. Moreover, its use is not attended by habit formation, or any untoward effects other than occasional "leaking" of the oil through the anus. The leaking does not occur when the better grades of oil are used, since they are of the properly selected viscosity to prevent leaking and yet insure lubrication. I have also used psyllium seed for the same purpose, and with much satisfaction. This is a seed about the size of a millet seed. A dessertspoonful of these seeds sprinkled on cereal, vegetables, or bread, acts as an excellent mechanical aid to defecation. This is accomplished by the swelling of the seeds while in the lower bowel and by the jelly-like substance that they exude. Thus they give bulk as well as lubricate the fecal mass. Psyllium seed is readily obtainable and is particularly of value in instances where patients have a dislike for the taste of mineral oil. Although a pure mineral oil is really tasteless, yet some patients have an aversion to it, and it is well to have available an alternative.

There are other aids to defecation, which I shall mention to condemn. The use of enemata, the indiscriminate use of colon irrigations for constipation, and the habitual use of cathartics, particularly the resinous cathartics (aloin, jalap, colocynth, and podophyllin), are to be avoided if one wishes to prevent the formation or aggravation of hemorrhoids. The same may be said in respect to the habit of straining at stool. Straining is often futile and always harmful. If feces are present in the rectal ampulla, and if they are well lubricated, there is no need for straining. If they are not well lubricated, it is best to inject a few ounces of mineral oil into the rectum and defer efforts at defecation for a few minutes until the fecal mass has been softened by the oil. Subsequent attempt at defecation will be easily successful without any straining whatever. In injecting the mineral oil in the manner suggested, it will be found that better results are obtainable by the use of unheated oil rather than warm oil. This is for the reason that oil of the ordinary room temperature, being cooler than body temperature, conveys somewhat of a thermal stimulation to defecatory end-organs. When warm oil is employed no such stimulation is aroused and hence warm oil injections are not as effective.

As a final thought on the prevention of hemorrhoids or the prevention of their aggravation, attention is called to the usually unrecognized relation in some cases of hemorrhoids to a systemic disorder, such as heart or liver diseases. Naturally, in such instances, the prophylaxis of hemorrhoids consists of the avoidance of these conditions or their amelioration when present.

To briefly recapitulate the suggestions for the prevention of hemorrhoids or the prevention of their aggravation when present, the following rules are offered:

1. Avoid overeating and overdrinking.
2. Avoid spices, red meats, and constipating foods.
3. Live on a vegetable and fruit diet.
4. Drink sufficient water daily.
5. Establish and maintain regular habits of eating and defecation.
6. Avoid straining at stool.
7. If there is any tendency toward constipation, take daily doses of a pure, heavy mineral oil.
8. If oil is objectionable to taste, use psyllium seed.
9. If heart, liver, or other ailments exist or coexist, these must receive appropriate treatment.

CHAPTER XII

PALLIATIVE TREATMENT OF HEMORRHOIDS

Palliative treatment of hemorrhoids is, to my mind, pardonable in very few cases. Active treatment directed at the cause of the hemorrhoids and directed at the removal of the hemorrhoids is in general the therapeutic treatment of choice. There are, however, three classes of cases in which palliation is frequently attempted.

Firstly, in an attack of mildly inflamed internal hemorrhoids, particularly during the first attacks. There are various measures which will afford relief, but never cure. It is for this type of treatment that the aid of suppositories and ointments are frequently invoked.

The second class of cases in which palliation is (rightly or wrongly) attempted are those in which prolapse, and possibly strangulation of internal hemorrhoids has occurred. Of course there are some who attempt palliation in every case, regardless of the pathological picture presented, and in this particular type of case, palliation is not only futile, but actually harmful, since strangulation may easily proceed to actual gangrene.

Thirdly, palliation may be justly attempted in that type of patient who obstinately refuses to agree to any other form of treatment.

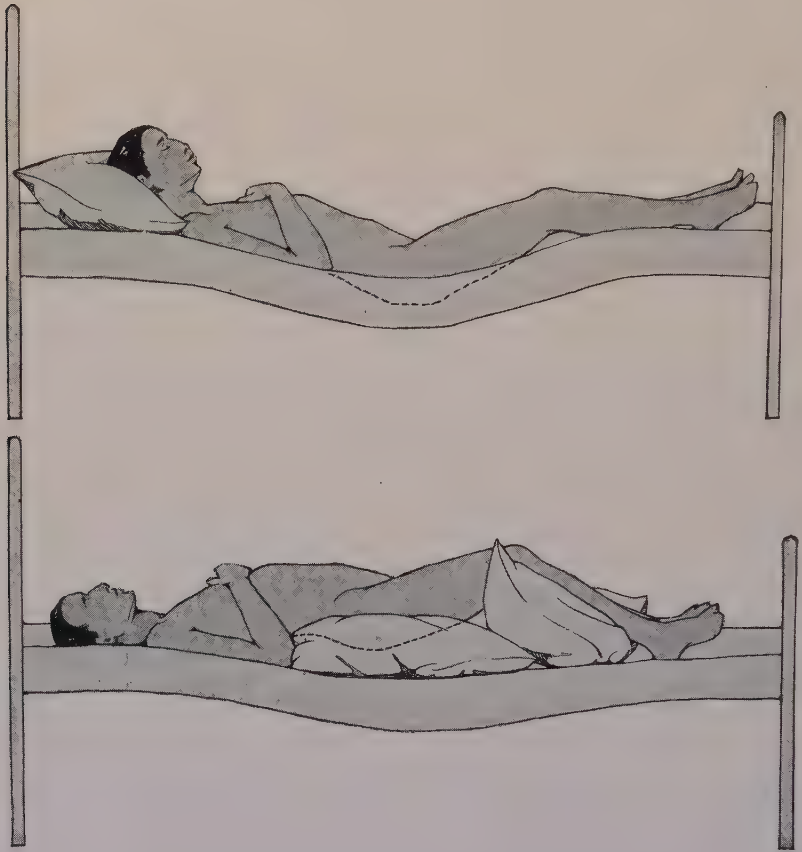
Of the various palliative measures with which I have ever had experience, the ones which have given me the promptest and most gratifying results have been two of the simplest possible. The ordinary hot sitz-bath or the use of the elevated pelvis position are the methods to which I refer. Under the title of "A Position of Maximum Comfort in Cases of Rectal Diseases," I described in the *Journal of the American Medical*

Association the elevated pelvis position. It will be both a comfort to the patient and of value to the physician to know that there *is* a position which will afford maximum ease. The position described herewith has been extensively tried and in my experience has proven decidedly superior to any other when employed in this type of case.

In the ordinary prone position the distribution of weight of the viscera, of the pelvis and abdomen, is distributed over the pelvic floor, thereby exerting an unkind pressure upon the acutely inflamed or recently operated-upon part. Thus, with the patient lying in bed in the ordinary position with a pillow at his head, he is theoretically lying level, yet he actually lies, because of the sagging of the bed, in such a manner that his anal and rectal region are considerably lower than the rest of his body. (Fig. 55a.) It can be readily seen that this dependent position by gravity alone does much to increase the local congestion already in progress. Superimposed as it thus is upon the inflammatory congestion following operation or upon the congestion incident to an inflamed condition, it invariably induces an extensive edema of the perianal skin and anal canal which adds very considerably to the distress of the patient by causing pain, a sense of " bearing down," tenesmus, and other varieties of discomfort.

The following simple arrangement entirely eliminates all of the undesirable features above mentioned. The head pillow of the patient is removed; a pillow is inserted under his hips and two pillows are inserted under his legs. With the various parts of his body distributed at these levels, the patient may lie flat on his back, on his abdomen, or else turn gently from his back to either side. A rubber air-ring semi-inflated may be placed under his sacrum or hips for additional comfort. It is by this time obvious that the rectal area is no longer in a position to be congested by gravity, nor can the pelvic viscera exert an unwelcome pressure upon the tender part. (Fig. 55b.) Edema will not occur. Furthermore, flatus escapes with ease. The total result is, that with all these factors of local disturbance eliminated the patient is exceedingly comfortable, far more so than he expected to be, because of the tales he has probably been told by some friend who may have had an agonizing experi

55a



55b

Fig. 55a and b.—Position of maximum comfort in cases of rectal disease.

ence the time he had his " piles removed." Aside from the gratefulness of the patient, it may be said on the physical side that the wound heals more rapidly.

The next most useful device in the palliation of hemorrhoids consists of various hydrotherapeutic measures, of which the hot sitz-bath is the most satisfactory. This is simply a hot bath of water at a temperature of 110 degrees Fahrenheit, in which the patient sits immersed up to his hips in hot water. The therapeutic factor in this treatment exists in the heat and not in the water. The heat tends to relax the spastic sphincter muscle and induce a peripheral distribution of the blood volume, thus relieving pelvic congestion, which is an invariable accompaniment of the hemorrhoidal state. Cold fountain baths are advocated in this condition also. These consist of a procedure which allows a stream of cold water to strike the perianal region, or enter the lower rectum, and is reputed to have a tonic effect upon the muscles of the rectum. Such fantastic attempts at palliation must indeed appear ludicrous to one familiar with the advantages and simplicity of the injection method or radium seed method of treating hemorrhoids.

Suppositories in one form or another have been suggested from time immemorial for the relief or cure of hemorrhoids. Those popular in recent years consist of either ichthyol and glycerine or else oil of cade and zinc oxide in a cocoa-butter base. Various weird formulas for the relief of this condition have found their way into suppositories, but have flourished a while and disappeared. As to how much value any suppository can have in a condition of varicose veins is certainly a matter open to debate. Hemorrhoids are at times a painful and troublesome complaint, and though some who are afflicted with them seek medical relief, yet there are many that procrastinate and seek palliative treatment. Since their idea of proper palliation is the employment of a suppository, the use of these has come into existence. It is regrettable that they are in fact often prescribed by physicians. Thus through the credulity and ignorance of the laity on the one hand, and the rut of senseless routine on the part of physicians, the suppository has continued down from the dark ages of medicine to our present day. Much as I dislike disturbing the venerable dust of such an old-time tradition, yet my regard for the truth is even greater than any sentimental respect for the practice. There is no reasonable ground for the suspicion that suppositories ever cured even a single case of hemorrhoids. Those few that get well during suppository treatment do so in spite of, rather than because of, this treatment. At best these suppositories can exert but a protective influence on hemorrhoids by coating the mucosa covering them with a mildly astringent or antiseptic mixture, and even this virtuous influence is questionable inasmuch as hemorrhoids are usually situated in the anal canal and lower rectum, whereas the suppositories when melted merely form a pool in the ampulla of the rectum at quite a distance above the hemorrhoidal zone. To offset these virtues, the fact remains that the introduction of a suppository mass into the rectum when hemorrhoids are present is at best a very painful procedure. It is conceivable that traumatic injury has at times resulted from the attempts of patients to introduce suppositories. Moreover, after this suppository has been introduced into the rectum, it constitutes in that position a foreign body, whose effect is identical with that caused by fecal masses, namely, a desire to evacuate. This false desire to evacuate, or tenesmus, leads to straining, which aggravates the condition and gives further discomfort to the patient. The beneficent qualities of suppositories may be obtained without the disadvantages just mentioned by the use of a bland, antiseptic, and anesthetic ointment introduced by a pile pipe or syringe. Better than either of these, however, is position.

One suppository which has come down to us through the medical ages is the opium suppository. It is still being used and recommended by many physicians, although it is a perfectly useless article of therapeutics. Although this suppository is supposed to possess a sedative effect by virtue of the opium it contains, the fact is that it is very ineffective for this or any other use. Extract of opium, its chief constituent, has absolutely no local anesthetic action, and not enough absorption occurs to allow very much of a general action. Whatever action it is found to possess consists merely in the protection afforded the mucous membranes by the melted cocoa-butter and its value in lubricating the feces.

In summing up our views upon the use of suppositories for the treatment of hemorrhoids:

Suppositories have no field of usefulness in the treatment of hemorrhoids. They are completely ineffective, and by deluding the patient or his physician, induce a neglect of more certain measures directed toward the cure of the condition.

The reason for this prevalent faith in some mystic smearing of the hemorrhoids is found in ignorance and indolence—ignorance of the pathology of the condition, and indolence expressed as an unwillingness to attempt understanding. When one comprehends the pathology of hemorrhoids, he is at a loss to understand why any medical man would attempt to treat a degenerative disease of the veins by applying an oily mixture of astringent drugs to the tissue adjacent to the affected veins. Would he treat an aneurysm in that manner?

Of course there are many cases to which the advocates of the suppository palliation will " point with pride " as being cases which have been relieved of an acute attack by the suppositories, but if one treats the same type of case in no other manner than by elevating the hips and lowering the head, as described in " A Position of Maximum Comfort in Cases of Rectal Diseases," he will find exactly the same percentage of cases relieved, but the fact remains that palliative treatment, either by position, hydrotherapy, salves, or ointments, are merely methods which evade the issue of a real cure. They may be permissible at times, but their prolonged use certainly is not. The safest and most certain method of palliative treatment is the use of the position above described.

CHAPTER XIII

THE OPERATIVE TREATMENT OF HEMORRHOIDS

THE operative treatment of hemorrhoids in one form or another is one of the oldest, as well as the most radical, of the various measures employed in an attempt to cure hemorrhoids. What the operative treatment attempts is the complete removal of the hemorrhoid. The exact procedure by which this is attempted varies with the particular method used, and the latter is, of course, dependent upon the type of hemorrhoids present and the general condition of the patient. There are, of course, situations in which there are definite indications for operative treatment. There are likewise situations in which certain types of operative procedure and, in some cases, all types of operative procedure, are contraindicated. A description of the various types of hemorrhoids has been given in detail in previous chapters, and we are here more definitely concerned with the selection of a proper method and the details of the execution of this method.

External hemorrhoids of the complicated variety are treated either by simple evacuation in the instance of thrombotic external hemorrhoids, or by excision with ligature in the instance of inflamed external hemorrhoids.

Internal hemorrhoids have been treated in several ways. The two main operations in common use at the present time are the ligature with excision, and the clamp and cautery method. In the former the hemorrhoid is ligated at its base and the hemorrhoidal tissue excised. In the latter the hemorrhoid is grasped by a flat clamp at its base, and the hemorrhoidal tissue above the clamp removed by actual cautery. In former days it was often customary to merely ligate the hemorrhoid and allow it to slough off. This was the simple ligature operation of the time of Allingham. It has been almost entirely replaced by the ligature with excision method described herewith. There are, of course, many other operations which are in the main variations of these two. No one of them has ever attained the widespread popularity of the two just mentioned, the single exception being the Whitehead, which will be discussed later.

Indications for Operative Treatment.—In the instance of external hemorrhoids, operative interference is indicated in all but simple hemorrhoids. Thus, in the presence of any complication, and particularly when the external hemorrhoid is thrombotic, operation must be considered. When rupture of a thrombosed external hemorrhoid has occurred or ulceration has taken place, wisdom consists in excising the diseased part. Whereas, an ordinary inflamed hemorrhoid may, under proper palliative treatment, subside, yet the recurrence is so inevitable, that time and trouble can well be saved by a simple removal of the external hemorrhoid. There can be hardly any comparison between the slight operation, practically devoid of risk, and the intense pain, discomfort, or possible ill consequences resulting from non-operative treatment of thrombotic or ulcerated external hemorrhoids.

In the matter of internal hemorrhoids, the indications for operative treatment are just as definite. Thus, in only one variety of internal hemorrhoids is non-operative treatment justifiable from a clinical standpoint, and that is in simple internal hemorrhoids which are giving rise to no symptoms or which have only been discovered in the course of a routine examination. In all other varieties of hemorrhoids, that is, in every instance of complicated hemorrhoids, operation is indicated. The complications of internal hemorrhoids are chiefly inflammation, prolapse of the hemorrhoid, ulceration, and strangulation. Clinically these are noted by the symptoms of persistent bleeding or extensive bleeding, by the repeated occurrence of prolapse of the internal hemorrhoids and by the pain, soreness, and reflex effects of ulcerated or strangulated internal hemorrhoids. In these circumstances, then, operation is indicated. There is one other instance when it is especially indicated. When there is present, coincident with hemorrhoids, a complicating anorectal disease, such as anal fissure, fistula, or cryptitis, there is but one form of treatment which can be considered as logical, and that is the operative treatment.

Contraindications to operative treatment have, by the advent of local and sacral anesthesias, been reduced to a minimum. To my mind, there are exceedingly few instances where hemorrhoidectomy cannot be successfully performed without risk to the patient. When properly performed, hemorrhoidectomy is one of the safest of all operative procedures and the operative risk involved approximates nihil. This is because of the possibility of avoiding, when required, the use of general anesthesia by the substitution of either sacral anesthesia or local anesthesia. Then, too, the factor of shock is reduced to a minimum by avoiding forcible dilatation of the sphincter and undue traumatism of the parts. Thus, from a surgical standpoint, we have a very favorable situation and one in which one may safely promise results.

There are, however, certain complications or situations in which operative treatment is obviously contraindicated. Should an ischiorectal abscess or any other acute infective anorectal condition be present, an operation for hemorrhoids should be deferred until such time as the former have been eradicated. Similarly, should carcinoma of the rectum be present, coincidentally with hemorrhoids, as not infrequently occurs, the hemorrhoids are relatively insignificant from the standpoint of pathology present, and it is not justifiable to submit a patient to an operation for them while neglecting the more serious of the two conditions.

Finally, in those instances where hemorrhage has been so severe or persistent as to reduce the patient's hemoglobin to a dangerously low level it is wise to defer radical operation pending a transfusion and general tonic measures. When the patient has responded to such treatment and his vitality has to a reasonable degree been replenished this contraindication is removed.

TYPES OF OPERATIVE PROCEDURE.—One of the earliest operative methods of treating hemorrhoids was by the ligature method. There is no adequate evidence as to who originated this method. Perhaps Ambroise Paré, who was the first to use the ligature in surgical operations, should be given this credit. The method itself, so far as hemorrhoids are concerned, has usually been ascribed to Allingham of England. It consists in dissecting away the hemorrhoid and then throwing a ligature about its base. The hemorrhoid, itself, was allowed to slough off. In this manner the hemorrhoid was removed in a partially surgical manner. The later modification of this method, which, indeed, is the operation in use today, consists of excising the hemorrhoidal tissue after tying a ligature about its base. With various slight modifications, this method is in vogue at the present time. These modifications consist, principally, in an attempt to sew up the wound of incision and obtain primary union. The virtue of these modifications is apparent only to their originators and none of them has come into widespread use. The advantages of the ligature method are that the hemorrhoid is dissected out with accuracy, ligated with precision, and hemostasis may be made complete and certain. Those of us who use this method find no appreciable postoperative pain, and never are troubled with hemorrhage. The one other method of hemorrhoidectomy which is of real importance is what is known as the clamp and cautery method, which has been in use since the year 1845. Cusack of Dublin, who is said to have devised this operation, used it extensively. It later found its way to popular favor in England under the guidance of Smith, who was an ardent advocate of the method. Here in America it has also been used for many years, and Kelsey, one of the best known of the early proctologists, was well satisfied with the efficiency of the method. At the present time the method is being very extensively used by general surgeons throughout this country, though it is considered passé, except in special cases, by most proctologists. Those who use the clamp and cautery method claim that their patients have less postoperative pain, heal more quickly, and have a smaller scar following the operation. The disadvantages of this method are that accurate hemostasis is not possible, and should cautery be insufficient at any point, hemorrhage is prone to occur. The control of this hemorrhage if attempted at some time following the operation is a very difficult matter owing to the difficulty in finding the bleeding vessels. The most recent statements of opinion as to the value and advantages of the method are those stated by Parker Syms in his article, " The Radical Cure of Hemorrhoids by the Clamp and Cautery Method, Emphasizing the Value of Sacral Anesthesia," in *Surgery, Gynecology and Obstetrics.* In this article, Syms reviews his experiences with the clamp and cautery method in six hundred consecutive cases of hemorrhoids. He is of the opinion that the method is much safer than any other method for the treatment of hemorrhoids, and believes that because of its safety it should be used in preference to any other method. He also states that it is the least painful of all the various operative procedures used in these cases, and hence it is the most comfortable to the patient. His observations lead him to believe that convalescence is made easy and that time of recovery is materially shortened. Syms, therefore, has had most excellent and fortunate experience with this particular operation and is emphatic in his recommendation of it as a procedure which is infinitely superior to what he chooses to call " incomplete operations." By the latter term he means simple ligation operation, ligation with excision operation, or the injection method. The only feature in connection with the clamp and cautery operation which he believes undesirable is the fact that a general anesthesia is required. He believes that objection can now be removed by the use of sacral anesthesia, which he enthusiastically recommends. It is to be noted, however, that this form of anesthesia was used in only sixty-four of the six hundred cases which he reports and that it failed in three.

I fear that the foregoing account is the glowing report of an enthusiast, for nowhere in the literature nor in my own experience can I find complete corroboration of this view. Moreover still further doubt has recently arisen in my mind following a study of questionaires on the question of comparative post-operative pain in these two operations. The majority of the surgeons answering consider the cautery method the more painful. A large percentage are of the opinion that both operations are equally painful. One answer gratuitously adds "the question of pain in the clamp and cautery operation is relatively unimportant when considered in conjunction with the risk of severe hemorrhage which the cautery operation carries with it." Only about twelve per cent. considered the ligature with excision method as the more painful of the two.

The majority of those employing the clamp and cautery method were general surgeons while the majority, by a wide margin, of those employing the ligature with excision method were specialists in rectal diseases. Assuming that specialists treat more cases than pluralists it seems logical to assume that they would, with other factors being equal, gradually gravitate toward the method which causes their patients the least amount of discomfort and pain. Personally I am inclined toward that inference.

In my own experience, I have found the clamp and cautery operation to rank with the ligature operation in respect to post-operative pain, and am of the opinion that not so much depends upon the type of operative technique used as upon the post-operative technique used. In other words, I believe that most of the pain incident to either operation is the result of using a ““ rectal plug ” or “ whistle.”

Selection of Operative Methods.—There seems to be a strong tendency on the part of most surgeons to use one method of operative procedure to the exclusion of all others. I do not believe that this can be done with justice to the patients we are called upon to treat. There are advantages and disadvantages peculiar to each method, and I believe the exercise of judgment in the selection of what method is best suited to the particular case in question will be productive of more satisfaction to both patient and surgeon than the machine-like employment of any one method. Thus, we are to consider each case as to the type of pathology present, the individual wishes of the patient, and his economic necessities. While urging this latitude of judgment in respect to the patient's wishes, yet the physician is, of course, the final arbiter as to the type of anesthesia to be used, the variety of operative technique to be used, and, particularly, as to the number of days that shall be devoted to convalescence, in any particular case.

It is my opinion that where circumstances necessitate the surgical removal of simple internal hemorrhoids, inflamed or prolapsed internal hemorrhoids, the ligature with excision method should be employed. Where ulcerated, thrombosed, or gangrenous internal hemorrhoids are present, I employ the clamp and cautery method of hemorrhoidectomy. It stands to reason that the suggestions given here constitute no hard and fast rule. They are merely suggestions based upon experience with many cases of hemorrhoids. Either the ligature with excision or the clamp and cautery method may be employed in any form of internal hemorrhoids with an assurance, if properly performed, of a good result.

Preparations for Operation.—There are few things in the practice of medicine which are so utterly inconsistent with established surgical principles as the usual preparation for a hemorrhoid operation. It has long been the custom to subject cases about to be operated upon for hemorrhoids to a rigorous course of local preparation; for instance, some contemporary writers on rectal diseases suggest a cathartic on the day before the operation, an enema the night before operation, and a low enema on the morning of the operation. This is supplemented by a liberal painting of the perineum and the neighboring tissues with a solution of tincture of iodine. Thus, there are few general surgeons who omit these usual preparatory orders. The exact rationale of the foregoing procedure has never been quite plain to me, and I gravely question whether its advocates have anything more than the indolence of tradition to guide them in concluding as to its efficacy. The idea of cleansing cathartics or cleansing enemas as a preliminary to hemorrhoidectomy is grossly erroneous since both these procedures, instead of giving us a bacteriologically clean area, are eminently adapted toward stirring up all manner of infective material in the colon and putting it in an aqueous suspension so that it may be readily conveyed to the tissues exposed by an operative wound. A little reflection will make the absurdity of this idea apparent. Yet, I know for a fact, that there are many surgeons who use this as a routine procedure. To my mind, it seems inexcusable to disturb the normal functioning of the entire intestinal tract in order to " clean " the lower eight inches of it. Particularly illogical does this appear when the ready accessibility of this area is considered. When cathartics and enemas are used, we increase, rather than decrease, the chances of infection. Moreover, there are not a few surgeons who know of the embarrassment and disgust which ensues when, after the patient is in place on the operating table, draped in sterile goods, the sphincter is dilated in a case where the enema has been retained. If any can believe that the area or anything within three feet of it is sterile after the explosive expulsion of the retained enema, then his ideas on bacteriology need revision. I am, therefore, very much opposed to the use of these senseless rectal rituals since they are useless, harmful, and, when employed, betray a woeful lack of bacteriological knowledge, as well as ludicrous surgical inconsistency. Of one thing we may be certain, and that is that cases not subjected to the above régime experience the operation without suffering any ill effects from the omission of the above-mentioned rectal rituals. Indeed, experience shows that cases not subjected to this treatment recuperate more rapidly and are subject to less postoperative discomfort. In order to convince myself as to the uselessness of such extensive preparatory procedures, I ran a series of ten cases, five of whom received extensive preliminary preparation and five only the meagre preparation which I recommend. In this series the cases which had the least amount of preparation experienced the least amount of postoperative discomfort and recuperated most rapidly.

The preparation I use and advocate is founded upon the principle of restricting infective material in so far as possible from entering the field of operation and upon the conviction that the less formal preparation there is for the operation, the less disturbed the patient is by it. Hence, I use the following routine: If the patient is seen long enough in advance of the operation, a laxative is given on the third day preceding the operation. No other medicine is given up until the time of operation. No enemas are given. On the day of the operation the parts are shaved. The patient, if nervous, receives morphine, grs. $\frac{1}{4}$, and atropine, 1/150, one-half hour before the operation. If the patient is not nervous this is omitted. At the time of operation the perianal region is washed with Harrington's solution or with half strength tincture of iodine. Other agents used for this purpose are acriflavine, acriviolet, or mercurochrome in solution. I prefer Harrington's solution for the reason that it is efficient as an antiseptic agent and has none of the staining qualities which the others possess. Immediately before the operation the patient is requested to void. After the perianal region has been washed with one of the foregoing antiseptic solutions, the sphincter is gently dilated and a small proctoscope is inserted. Through this the entire lower rectum and anal canal is mopped dry with cotton swabs. Usually, there is nothing but a scant amount of mucus present. Should a small pledget of cotton be lost, no great concern need be felt since it is a matter of small consequence. It will cause no trouble and will be evacuated with the first bowel movement. I have seen surgeons become very excited over losing a cotton swab in this manner, but such concern is futile. With the rectal and anal canals sponged dry, we are ready to proceed to the operation.

SELECTION OF ANESTHESIA IN HEMORRHOIDECTOMY.—As with operative methods, so with anesthetic methods. There are surgeons who use one method to the exclusion of all others, often to the discomfort and frequently to the detriment of their patient. While I believe there are very few cases of hemorrhoids which could not be operated upon under local anesthesia, yet I do not hesitate to employ a general anesthetic in those cases where nervousness on the part of the patient would make the nervous strain of " listening in " on the operation a severe mental shock. This is particularly true in cases where the clamp and cautery method is used, for the smell of burning flesh is not particularly delectable when one knows that he himself is the sacrificial goat. With the exception, however, of cases whose temperament requires a general anesthesia, I employ local anesthesia in by far the great majority of cases. The ready availability and the lack of danger in the use of local anesthesia make it particularly attractive. This is especially true in regard to the patient who can often be persuaded to submit to the operation under these circumstances, whereas he would refuse to undergo the same operation under general anesthesia. Hemorrhoidectomy can be performed very successfully under sacral anesthesia, as Syms and others have shown, but I believe that its use is limited to particular cases where the administration of a general anesthetic would constitute a serious risk, and where some local infective condition is present which would preclude the use of local anesthesia. The method is not as ideal for use in connection with hemorrhoidectomy as Syms' report would lead us to believe. In the first place, the average surgeon could perform a complete hemorrhoidectomy in the time it takes to administer and obtain the effect of sacral anesthesia. This objection is, of course, sufficient to exclude it for routine use. In a large hospital, where one may have an assistant, administering sacral anesthesia for one case while the surgeon is operating an another, the method is, perhaps, applicable. For the average practitioner, however, the method possesses no advantages over the other methods of anesthesia and in addition is productive of, in many instances, leg pains which do not ordinarily follow the use of local anesthesia.

The particular anesthetics used in connection with hemorrhoidectomy are as follows: For general anesthesia, gas-ether is preferable to all others. Gas-oxygen may be employed, but is not as satisfactory as gas-ether, owing to the lack of relaxation of the sphincter. There also appears to be a tendency toward hemorrhage when gas-oxygen is used. Chloroform should never be employed, owing to the greater risk involved with the use of this anesthetic and the particular risk incurred when used in any operation involving a dilatation of the sphincter during its use.

For local anesthesia novocaine is by far the most satisfactory. The use of cocaine is obsolete, and justly so, considering its greater toxicity and lack of superiority over novocaine. Of the various other derivatives of this series I will say little more than that, after trying the majority of them, such as eucaine, beta-eucaine, etc., I have invariably returned to the use of novocaine. There are some who prefer quinine urea-hydrochloride, but I have not found it satisfactory owing to the pain involved in its injection and the time required for obtaining its anesthetic effect. To the various anesthetic solutions adrenalin or epinephrin may be added for its hemostatic qualities. The formula that I use and recommend is as follows:

Each cc. to contain:

		G. or cc.	
Novocaine or Procaine	grs. $^{1}/_{6}$		011
Adrenalin	♏ $^{1}/_{1200}$		00005
Ringer's Solution	q.s. ad. ♏ xv	1	00

This solution is easily prepared or may be obtained in carpule form, ready for use, from Cook Laboratories, Chicago. Exact points of infiltration shown in Fig. 59.

Position of the Patient.—Varying with the method of anesthesia employed, the position varies. When general anesthesia or sacral anesthesia is employed the dorsal or lithotomy position is the position of choice, although the left lateral or Sims' position may also be employed with sacral anesthesia. Any position may be utilized when local anesthesia is employed, though the author prefers the knee-chest position or knee-elbow position in operations upon males, and the left lateral Sims' position in operation upon females.

Draping the Patient.—This also varies with the position used, the object of any draping being to leave exposed only the immediate operative field.

Procedure in the Evacuation of Thrombotic External Hemorrhoids.—This may be readily done in the knee-elbow or Sims' position. It is usually unnecessary to employ a general anesthetic, as local anesthesia is quite sufficient. Through a 20-gauge needle the local anesthetic is injected under the skin on all sides of the thrombotic external hemorrhoid. When the skin immediately surrounding the hemorrhoid has been thoroughly infiltrated, a short incision is made over the thrombosed hemorrhoid in the line of its longitudinal axis, as in Figure 56. The incision is carried down through the skin and areolar tissue until the clot is delivered through the wound. The edges of the wound are then trimmed in such a manner as to leave an ellip-

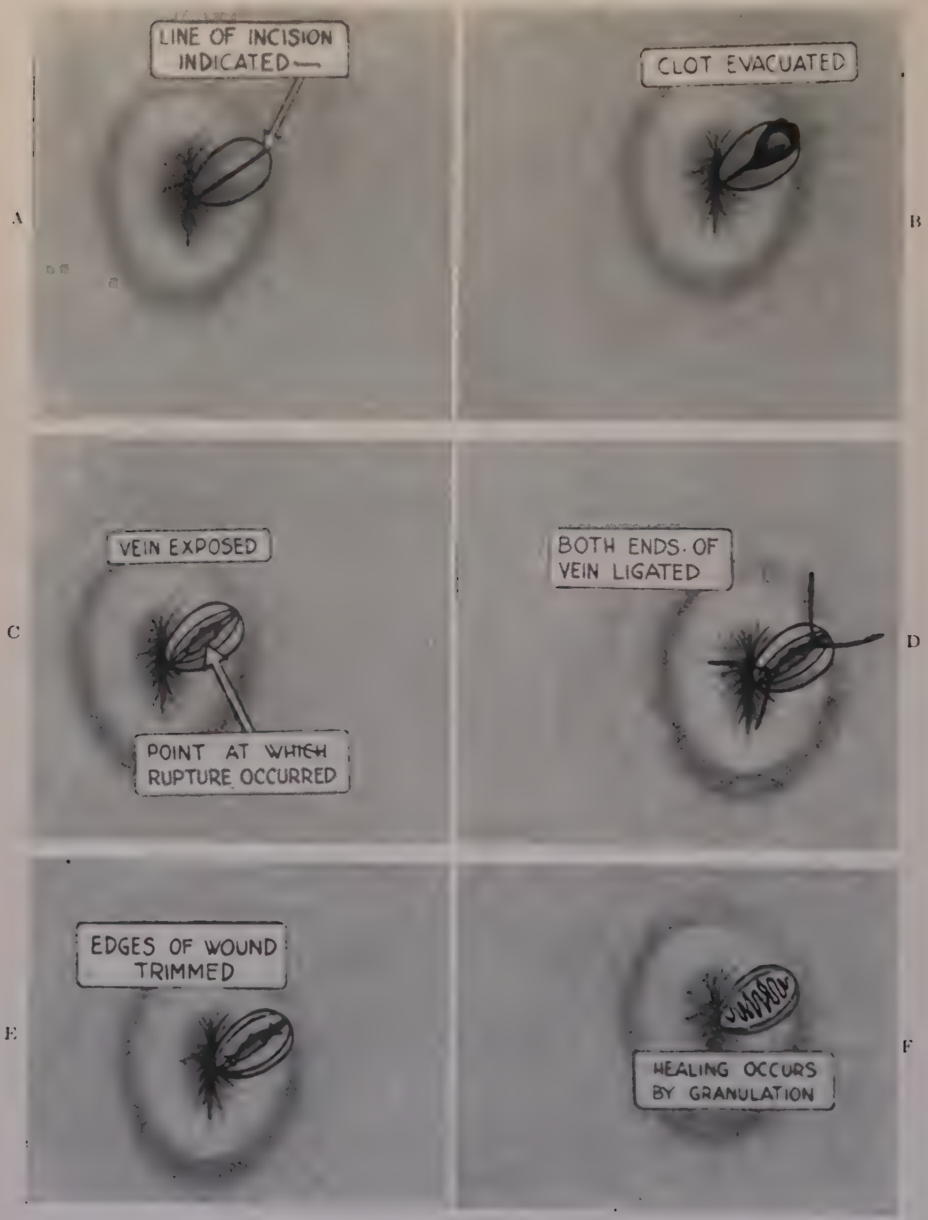

A
LINE OF INCISION INDICATED
B
CLOT EVACUATED
C
VEIN EXPOSED
POINT AT WHICH RUPTURE OCCURRED
D
BOTH ENDS OF VEIN LIGATED
E
EDGES OF WOUND TRIMMED
F
HEALING OCCURS BY GRANULATION

Fig. 56.—Surgical treatment of thrombotic external hemorrhoid.

tical wound. Following this, a very fine catgut ligature, number 00, is tied about the upper end of the ruptured vein, and a similar one tied about the lower end of the ruptured vein. The wound is then packed with plain gauze strips a quarter-inch wide and is left to heal by granulation.

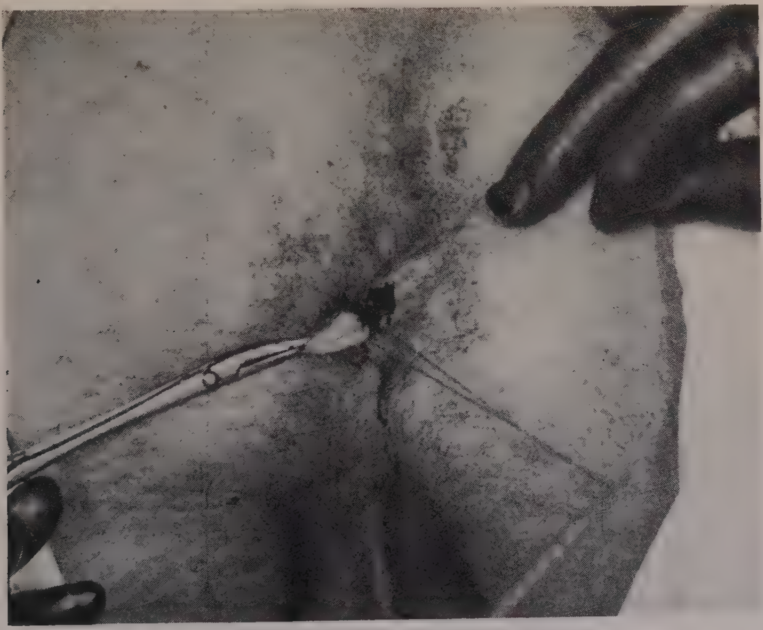


FIG. 57.—Excision of inflamed external hemorrhoid.

PROCEDURE IN THE EXCISION OF ULCERATED OR INFLAMED EXTERNAL HEMORRHOIDS.—After infiltrating the skin surrounding the external hemorrhoid with the anesthetic solution the hemorrhoid is grasped with an Allis clamp and dissected away at its base. When dissected free from the skin, it is transfixed with a chromic catgut ligature, number 2, and the hemorrhoid above the ligature excised. The wound is allowed to heal by granulation. (Fig. 57.)

PROCEDURE IN LIGATURE WITH EXCISION HEMORRHOIDECTOMY

Surgical supplies needed:

1 pair sterile leggins.
1 perineal sheet.
6 towels.
3 pairs sterile gloves.
3 gowns.
K. Y. lubricant.
3 tubes of No. II chromic catgut—Johnson and Johnson.
3 packages 2 x 4 sponges.
6 fluff dressing pads.
1 Montague rectal dressing binder. (Fig. 92.)
1 Montague flatulence catheter. (Fig. 89.)

Instruments required:

4 blunt hemostats.
2 pointed hemostats.
1 Montague dilating rectal speculum. (Fig. 27.)
3 round-bodied curved needles. (Fig. 73.)
1 scissors, double-edged dissecting. (Fig. 75.)
1 needle-holder.
1 blunt curved-on-the-flat scissors.
2 sponge-holders.

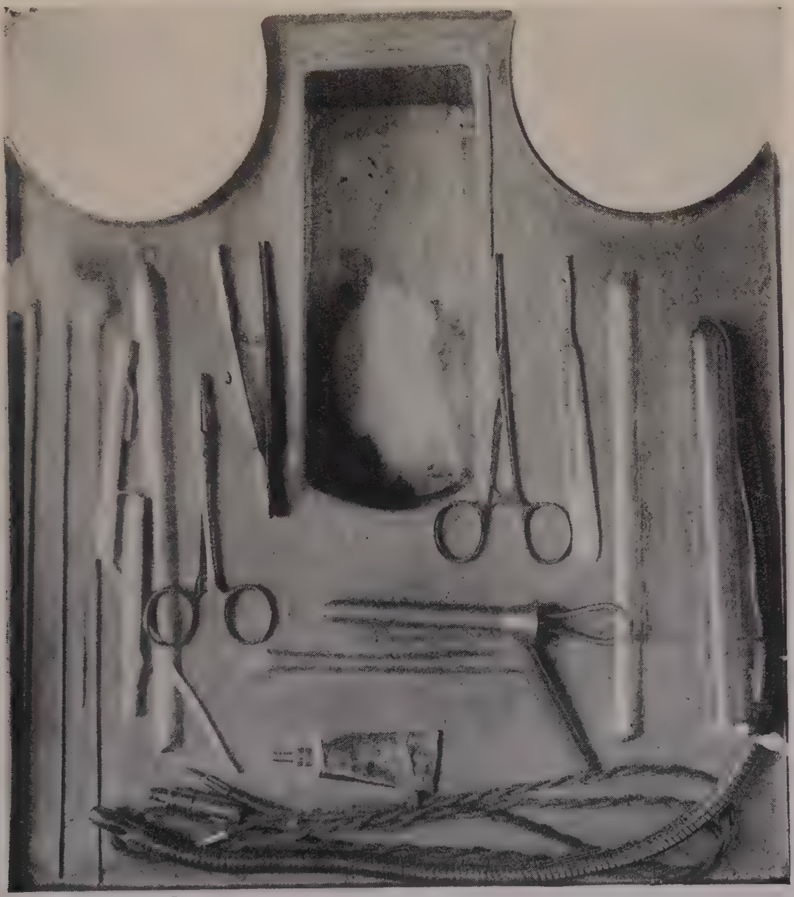
If local anesthesia is to be used:

1 Luer syringe with needles or
1 Cook syringe with carpules. (Fig. 93.)

When a ligature with excision hemorrhoidectomy is performed under local anesthesia, it may, in male patients, be best performed in the knee-chest position. The advantages of the position are of course the unexcelled access to the parts and the fact that normal relations are not much disturbed in this position. No great amount of retraction is necessary in order to view the area under consideration. In these and other respects the knee-chest posture is considerably superior to the Sims' or the lithotomy positions.

As an accessory to the convenient use of this position, the combined dressing tray and drainage basin described herewith is suggested. Its use will facilitate the treatment of hemorrhoids, either by operative or injection methods.

Briefly the appliance is a combined tray and basin. (Fig. 58.) The basin is so placed as to come between the patient's legs, while the tray fits in the arc of the thighs and rests upon the calves of the legs. It can neither slip nor upset and furnishes a maximum of working surface with a minimum of bulk. The weight is scarcely perceptible to the patient, and



Courtesy of Frank Betz Co.

FIG. 58.—Combined dressing tray and basin. Useful in dressings or operations under local anesthesia when the knee-chest position is used or for use with the injection treatment.

causes him absolutely no discomfort. When in use it is not in the surgeon's way, and upon the completion of the examination, or other procedure requiring its use, the tray is in one instant removed, and with it all the implements and materials used. Thus the possibility of being embarrassed by the patient finding the applicator or forceps in his trousers is entirely obviated.

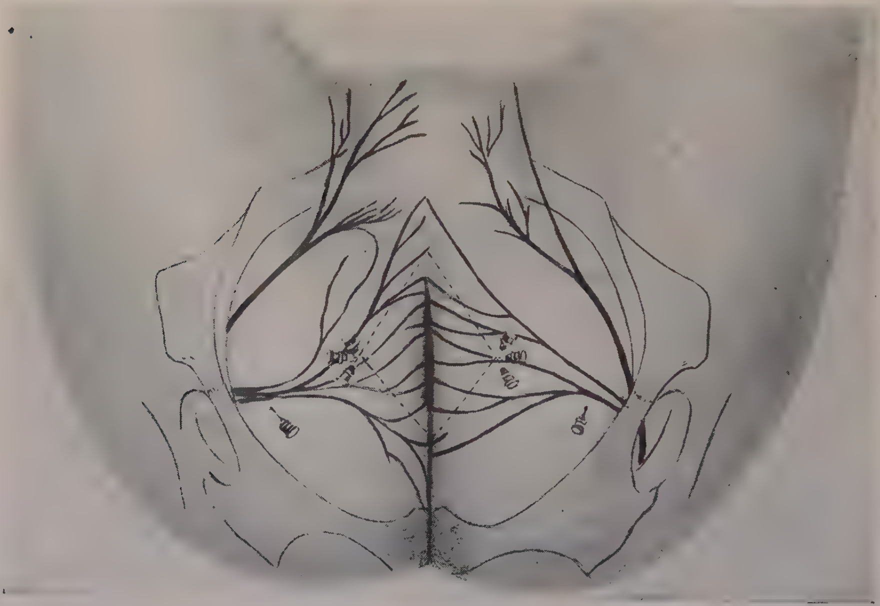


FIG. 59.—Method of inducing local anesthesia preliminary to hemorrhoidectomy.

In diagnostic work, the tray holds the proctoscope and sigmoidoscope, applicators with cotton for cleaning, battery for electrically lighted instruments, forceps, probes, lubricating jelly, and sponges. Speculæ and retractors are placed upon the tray, and applicators, probes, and vulsellum are all conveniently arranged for ready use. Into the basin may be placed soiled applicators and instruments after they have been used. If there be any drainage of fecal matter, or bleeding, the basin will take care of it since its position is directly below the area.

For use in conjunction with operation the various materials, such as applicators, drains, sponges, tampons, and pads, may be arranged upon the tray. In this position they are within easy reach, and yet are not in the way. Topical applications may be made, and the soiled applicators cast into the basin. If a wound be irrigated there need be no danger of soiling the clothing, since the fluid drains directly into the basin beneath, and the tray protects the legs.

Many surgeons who use local anesthetics in rectal operations will find the appliance particularly convenient. Upon the tray may be arrayed their instruments, syringes, and sponges, while the necessity of holding a pan to collect blood incident to bleeding from the wound is done away with, since the basin portion of the tray will take care of it.

I believe the use of this combined tray and basin will be found advantageous in any procedure where the knee-chest position is employed.

Technique

After anesthesia, either local or general, has been induced the sphincter is gently dilated. If by this procedure the hemorrhoids do not prolapse readily into view, a small anoscope may be inserted. (Fig. 60.) In any event, the hemorrhoids are brought into view and each individual hemorrhoid is grasped by a blunt-pointed hemostat. (Figs. 61 and 62.) By gentle retraction of these now, the entire anal canal may be everted. An assistant now maintains this eversion by gentle traction on the hemostats. An individual hemorrhoid is then seized and an incision is made at its inferior base. (Figs. 63 and 64.) This incision is carried for half an inch up on either side of the base of the hemorrhoid and the latter is then gently dissected away from the submucosa either by blunt dissection with the scissors' blade or else with the finger covered with gauze. (Figs. 65 and 66.) After the hemorrhoid has thus been dissected away from the submucosa, it is transfixed with a No. 2 chromic catgut ligature. (Figs. 67 and 68.) For introducing this ligature a round needle is preferable, for the reason that a triangular or cutting needle is apt to tear the tissue and be followed by slipping of the ligature, with consequent hemorrhage. I have used the Anchor needles with great satisfaction and find they do not tear the tissue as readily as other needles. After the hemorrhoid has been transfixed the ligatures are tied. (Figs. 69 and 70.) (Double surgeon's knot.) The hemorrhoid is then tied off in two sections, one portion of the ligature being tied above and the other below the hemorrhoid. As an added precaution, the ends of both of these may be tied together. Mummery crushes the stump with a clamp before ligating it as a precaution against slipping. The hemorrhoid is then excised. It is wise to leave a generous stump (Figs. 71 and 72) to take care of the possibility of the ligature slipping, as will occur if the stump is left too short. This is the sum total of the technique used by many surgeons with great satisfaction. The other hem-

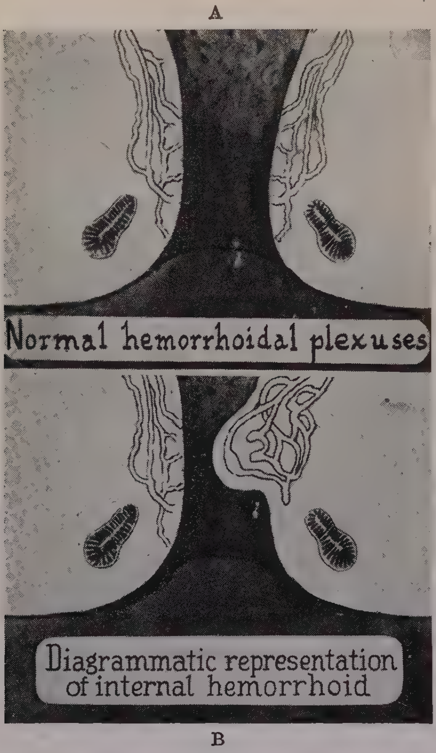
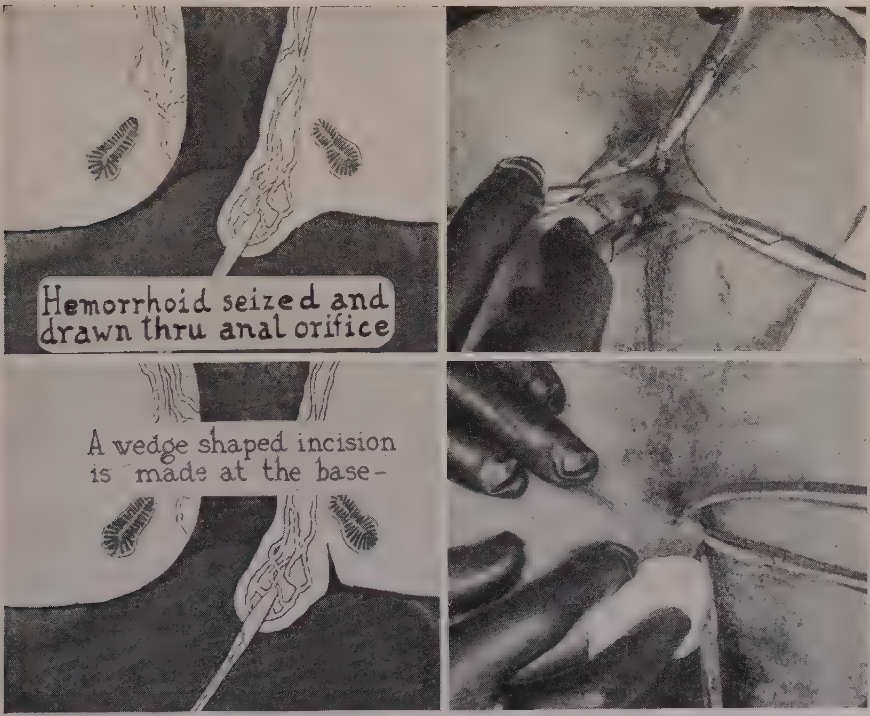

A
Normal hemorrhoidal plexuses
Diagrammatic representation of internal hemorrhoid
B

Fig. 60.—Diagrammatic representation of internal hemorrhoids.

orrhoids present are, of course, treated in a similar manner. There are some, however, who prefer to amplify this technique somewhat by rethreading their ligature and suturing up the wound of dissection left at the base of the hemorrhoid. There are others who take these ligature ends and with the aid of a needle take a stitch in the dissection wound. When the stitch is then tied, the base of the stump is buried in the inferior dissection wound. I have a positive dislike for both of these latter procedures since, although they leave a neat wound at the time of operation, I have never yet seen one which did not break down


61
62
Hemorrhoid seized and drawn thru anal orifice
A wedge shaped incision is made at the base-
63
64

Figs. 61-72.—Ligature with excision hemorrhoidectomy. (First stage.)*

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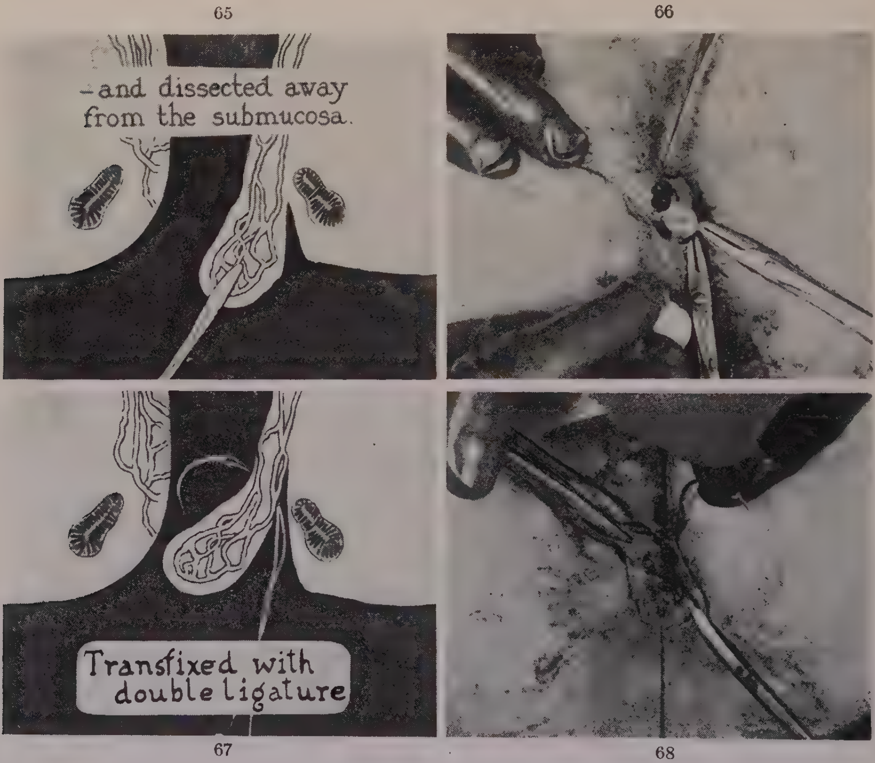
* These, and all the operative pictures which follow, both diagrammatic and actual, are taken from my "Motion Picture Course in Proctology."

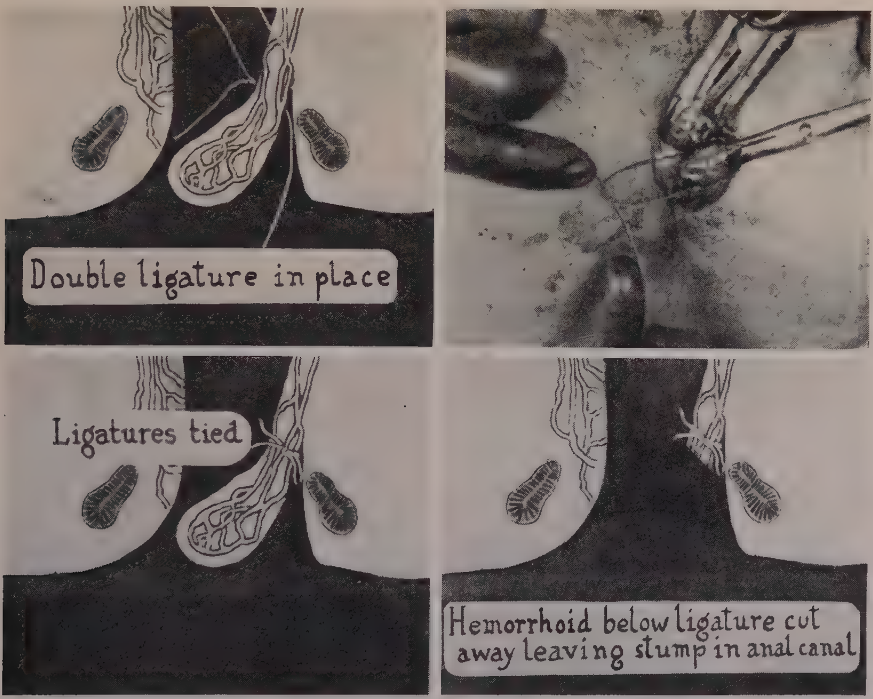
within two or three days as the result of infection, which is almost a certainty. When the wound has broken down, and the stitches have come loose, we have, of course, exactly the situation existing when we do not go to all the trouble of putting the stitches in. Moreover, from the standpoint of comfort to the patient, there is much to be said in favor of leaving the wound wide open. It, therefore, seems wise to allow a simple operation to maintain its simplicity, rather than make any attempt at converting this simple operation into a complicated one.


65
66
–and dissected away from the submucosa.
Transfixed with double ligature
67
68

Figs. 61–72.—Ligature with excision hemorrhoidectomy. (Second stage.)

There are two points concerning the operation which I think worthy of careful thought. The first of these is the extent of mucosa which we remove, and the second is the care with which the hemorrhoid is dissected away from the submucosa. (Figs. 63, 64, and 65.) In the first place, if we are overzealous in our removal of mucosa, we are very apt to duplicate in effect, if not in actual principle, the much-condemned Whitehead operation. Indeed I have seen the ligature operation performed in such a manner as to leave little choice between it and a Whitehead operation. On the other hand, if in making our incision at the base of the hemorrhoid, we are overzealous in removing

69 70


Double ligature in place
Ligatures tied
Hemorrhoid below ligature cut away leaving stump in anal canal

71 72

Figs. 61–72.—Ligature with excision hemorrhoidectomy. (Third stage.)

skin surface we will get a form of anal ectropion similar to that shown in Figure 76. Here the mucosa is markedly everted because of the contraction of the skin. This abnormality is often evidenced by anal pruritus.

As to our second point, namely, the care with which the hemorrhoid is dissected away from the submucosa, it may be stated that the object of this care is to avoid injury to the external sphincter fibres. With reasonable care these will not be damaged. Fortunately, a large proportion of these fibres may be damaged without very serious consequences because the internal sphincter is really the most important in sphincter control. Nevertheless, I have seen cases of partial incontinence as a result of damage to the external sphincter fibres.

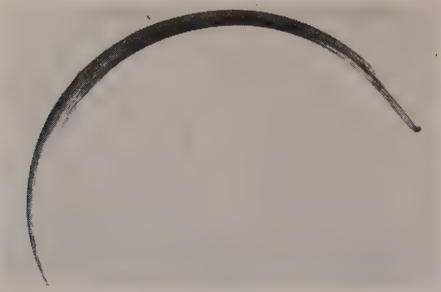


FIG. 73.—Round-bodied needle used for transfixing hemorrhoid.

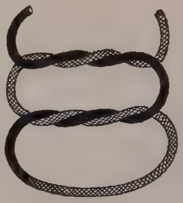


FIG. 74.—Double surgeon's knot recommended for tying hemorrhoid stump.

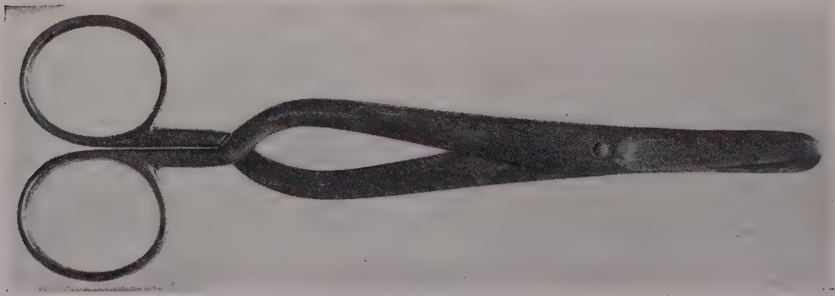


FIG. 75.—Double-edged dissecting scissors; useful for freeing hemorrhoid from its base.

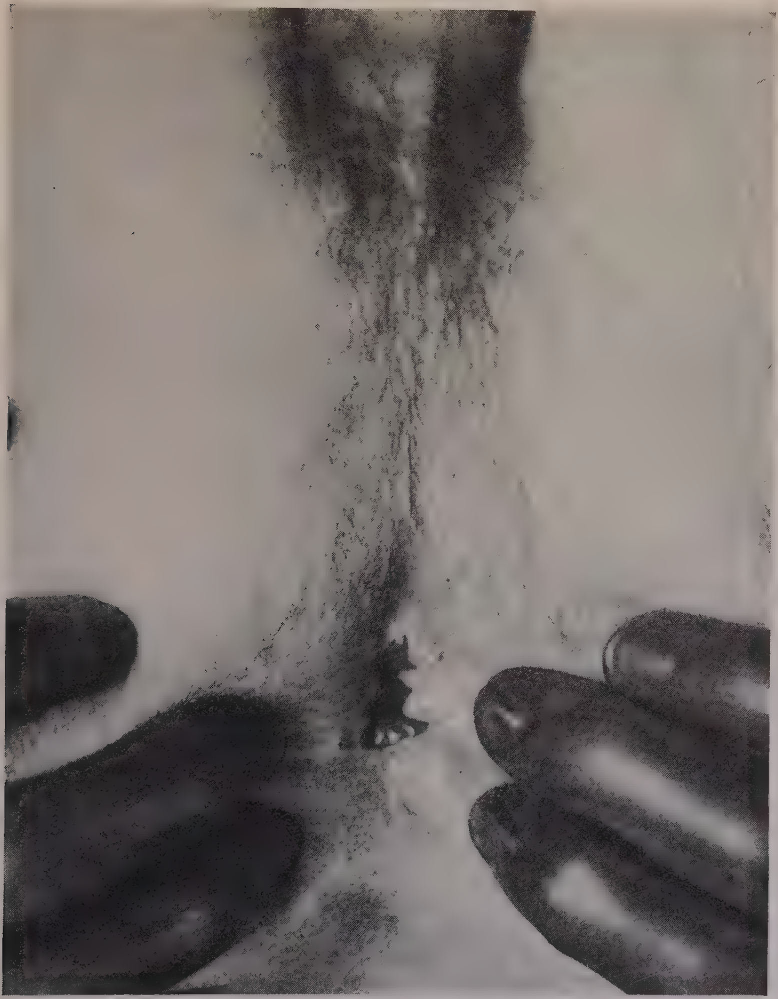


FIG. 76.—Anal ectropion, the result of overzealous removal of skin during hemorrhoidectomy.

Procedure in Clamp and Cautery Operation

Surgical supplies needed:

1 pair sterile leggins.
1 perineal sheet.
6 towels.
3 pairs sterile gloves.
3 gowns.
1 Montague rectal dressing binder. (Fig. 92.)
K. Y. lubricant.
2 doz. gauze pads 2 x 2.
4 split gauze pads 4 x 4.
Cotton.
1 Montague flatulence catheter. (Fig. 89.)

If mattress sutures are to be taken:

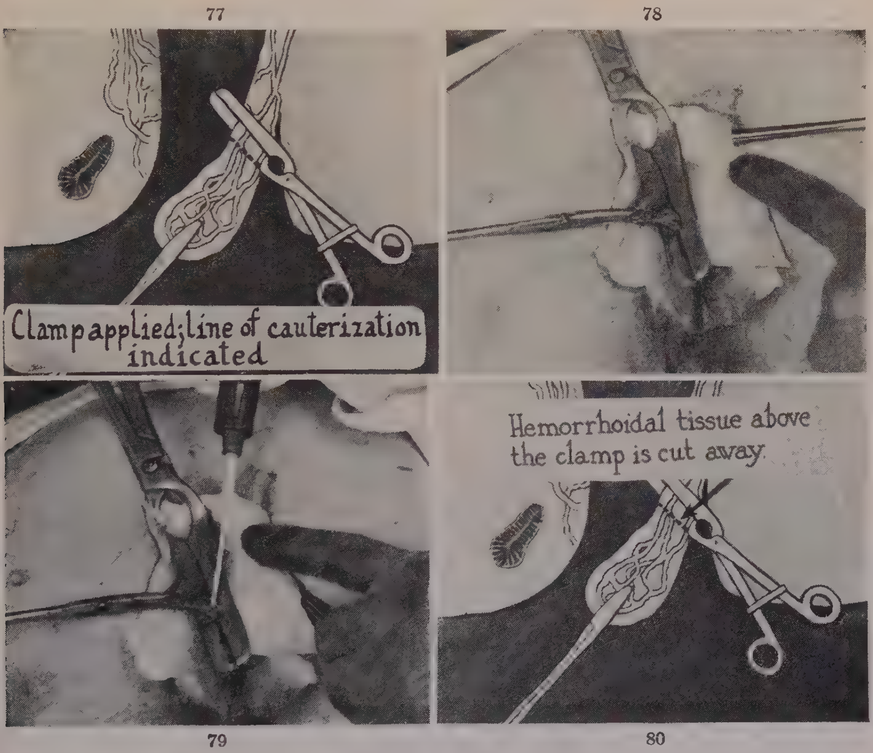
3 tubes of No. II twenty-day chromic catgut (Johnson and Johnson).
2 round-bodied curved needles. (Fig. 73.)
1 needle-holder.

Instruments needed:

4 blunt hemostats.
1 Montague dilating rectal speculum. (Fig. 27.)
1 Post electrocautery. (Figs. 86 and 87.)
2 pointed hemostats.
1 double-edged dissecting scissors. (Fig. 75.)
1 scissors curved on the flat.
1 Collier F. Martin special cautery clamp. (Fig. 85.)

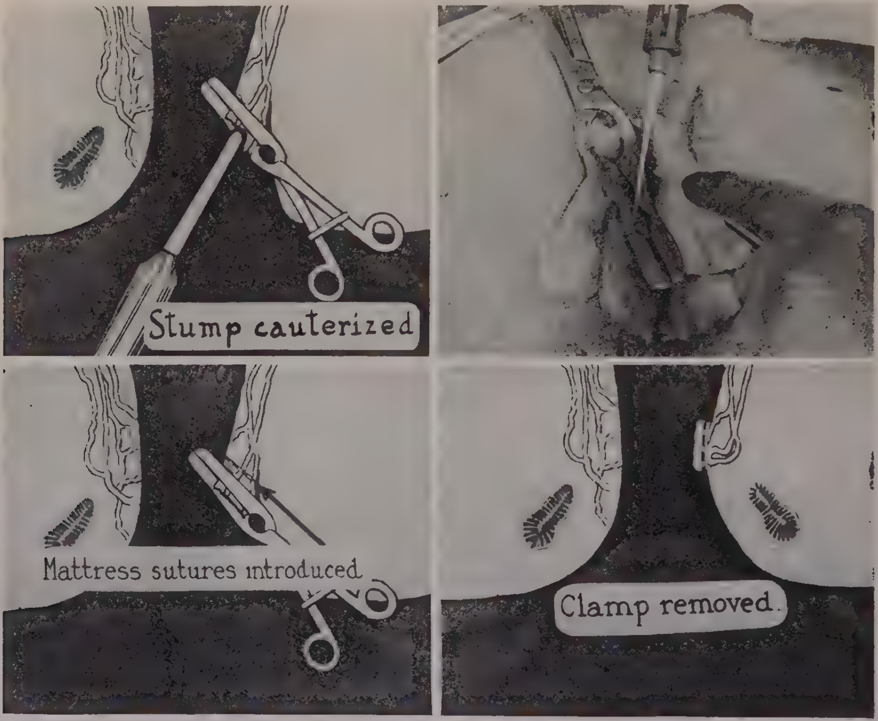
Technique

After anesthesia has been induced the sphincter is very gently dilated. If, after preliminary dilatation, the hemorrhoids prolapse into view, they are seized individually with the grasping forceps and brought down still further. If difficulty is encountered in securing the hemorrhoid the proctoscope is inserted and the grasping forceps applied through the proctoscope. One advantage of the Montague rectal speculum is that upon withdrawal it may be readily disengaged from the clamps by a slight pressure on the handle of the speculum. When other specula are used it is necessary to remove and reapply each clamp in order to free the speculum. This causes delay and trouble, which can readily be avoided by the use of my dilating rectal speculum. After the hemorrhoids have been drawn down in the manner described above, one of them is lifted and an incision made at its base. The hemorrhoid is dissected loose from the submucosa, and when thoroughly freed, it is grasped tightly at its base between the jaws of a special clamp, such as is shown in Figures 77 and 78. A split gauze pad is then placed around the hemorrhoid base underneath the clamp so as to protect the parts below from the heat of the cautery. (Fig. 79.) The hemorrhoidal tissue above the clamp is then


77
78
Clamp applied; line of cauterization indicated
Hemorrhoidal tissue above the clamp is cut away.
79
80

Figs. 77–84.—Clamp and cautery hemorrhoidectomy. (Second stage.) First stage same as shown on page 165. (Figs. 61–64.)

cut off or seared off. (Fig. 80.) The stump remaining is then thoroughly cauterized by a cautery point heated to a cherry-red heat. In this manner the hemorrhoidal mass superior to the clamp is removed, and the stump left is sealed both by pressure and by coagulation of the tissues in the stump. (Figs. 81 and 82.) I have used for this purpose, and with eminent satisfaction, an inexpensive portable electrocautery, made by the Post Electric Company. Some surgeons prefer to safeguard the wound further by applying a continuous stitch over the line of cautery while the clamp is still in place, and then, after re-



81 82

83 84

Figs. 77–84.—Clamp and cautery hemorrhoidectomy. (Third stage.)

moving the clamp, draw the suture tight and tie it. When I use the clamp and cautery method, I introduce a mattress suture along the line of cautery below the clamp. (Fig. 83.) By this step the possibilities of separation of the wound edges, and consequent hemorrhage, are materially reduced. The application of powdered alum to the surface of the wound is also recommended by some for its astringent and hemostatic properties. (Fig. 84.)

In connection with this operation, mention should be made of the danger involved by the use of a benzine cautery in circumstances where electrocautery is not available. This danger consists in the possibility of fire when ether is employed as the anesthetic. There are also certain errors in technique to be avoided. These consist of neglecting to make the skin incision and of omitting the dissection from the submucosa. Neglect of this step results in enormous pain postoperatively, as the skin becomes markedly edematous from the heat. Moreover, the skin often remains long after as a skin tag, which leads the patient to believe that the operation has been incompletely performed. Another matter concerning which care must be taken is the manner in which the special clamp is applied. The clamp should be applied so as to be parallel with the longitudinal axis of the rectum, since a scar in the transverse direction can readily result in an undesirable stenosis or stricture. Then, too, the clamp must be securely tightened before cutting the hemorrhoidal tissue away, otherwise slipping, with consequent hemorrhage, is liable to occur. Moreover, when the hemorrhoidal tissue is cut away, it should *not* be cut too close to the clamp. The stump is to be slowly charred with a cherry-red heat. The use of any more intense heat will cause burning, and may later cause separation of the wound. The omission of the mattress suture invites trouble, since not much strain is required to tear open the cautery wound. Finally, one must not remove any more mucosa than is absolutely necessary, since indiscretion in this respect may lead to a stenotic condition, when contraction of the scar tissue in the wounds occurs.

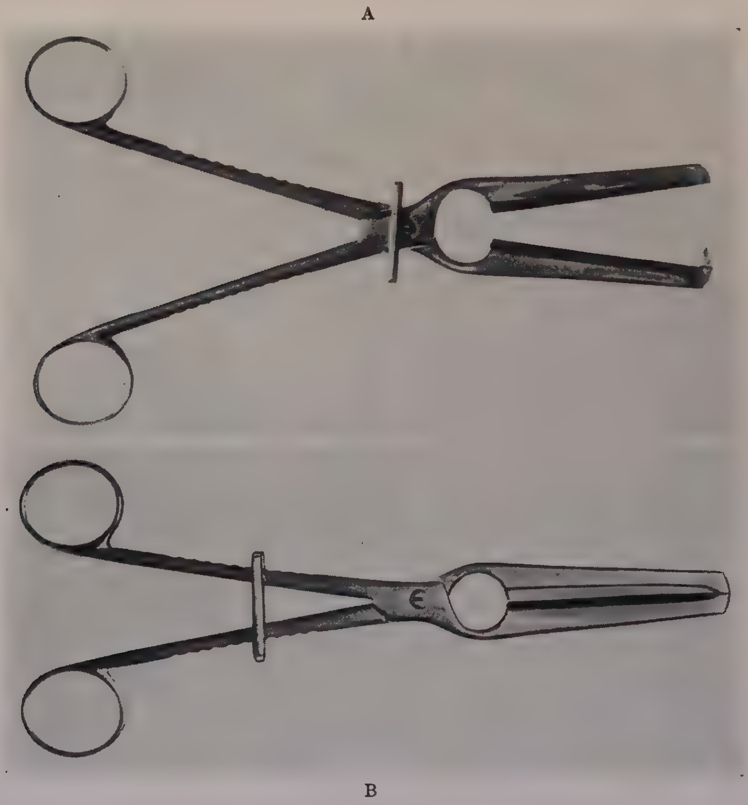


Fig. 85.—Collier F. Martin special cautery clamp.

The Whitehead Operation

The Whitehead operation is mentioned here to express unqualified disapproval of the method. Practically all authorities are agreed upon the brutality of the method, its futility, and upon the particularly frequent occurrences of serious complications and the very common recurrence of the hemorrhoids. A modified Whitehead operation is suggested by John O'Connor in the *British Medical Journal,* May 13, 1922, as a radical cure for hemorrhoids. He describes his modification and technique as follows: He believes that primary dilatation of the sphincter entails an unnecessary magnification of the perspective and that it may readily result in a confusion of the anatomy of the parts. He, therefore, limits primary dilatation to the insertion of the right index finger in search of polyps, ulcer, etc. He then applies pressure forceps at the junction of the skin and mucosa to each of the four cardinal points of the anal circle. With adjoining forceps held in opposing traction, he makes a rapid incision with a straight blunt-pointed scissors until the skin is completely detached. He applies another pressure forceps to the cut edge of the latter, between each of the

86

87

Courtesy of Post Electric Co., New York, N. Y.

FIGS. 86 and 87.—Post electrocautery.

four forceps originally placed. He grasps the eight forceps in the palm of the left hand, inserts the left index finger into the rectum, and cuts lightly around with scissors until the external sphincter appears well in view. The cutting must be done below and external to it until the Whitehead adit (submucosa) is exposed. With the manœuvre mentioned before he continues cutting the attachments to the muscular coat until the hemorrhoidal cylinder can be peeled out by a blunt dissector. He then makes a vertical slit in the protruded cuff, up to the level of the "supra-Morgagnitic" circle; commences a continuous catgut suture at the apex of the slit, drawing the "red" mucosa into accurate apposition with the skin; then cuts transversely, a half-inch at a time, at that level and carries on the continuous suture; all spurting vessels should be immediately ligated. He then introduces a morphine suppository and a slender roll of dry gauze into the rectum, applies a dry gauze dressing, which is changed daily. On the fifth morning he gives the patient one ounce of castor-oil, sponges the parts after each stool with warm permanganate solution, adds a warm permanganate sitz-bath, and reapplies dry dressing. On the seventh morning the nurse inserts the right index finger anointed with zinc and boracic ointment into the canal to educate the patient to do the same for two months. Any remaining tags are snipped off under eucaine on the ninth day.

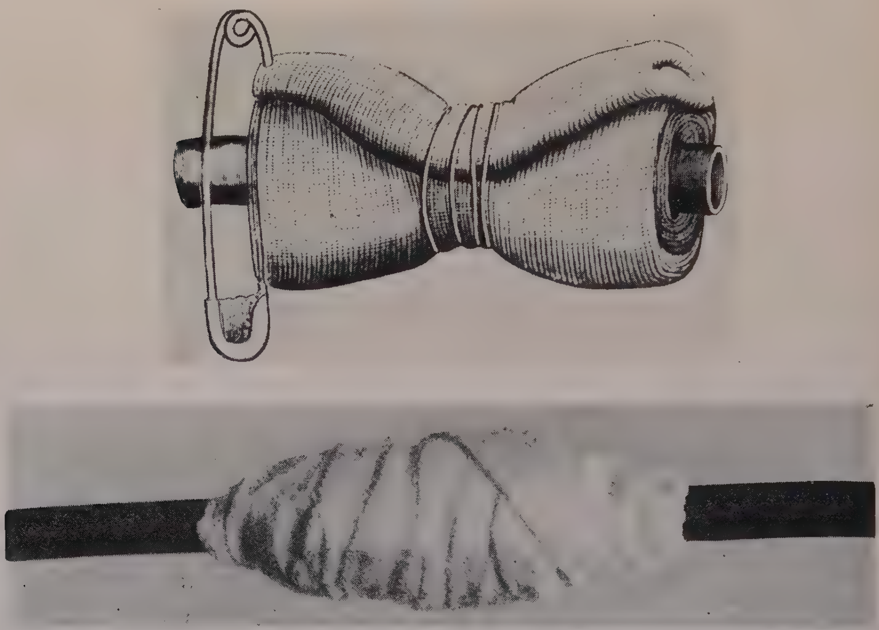
Other Operative Methods

Earle's Method of Hemorrhoidectomy.—After dilating the anus the hemorrhoids are seized with clamps, and are drawn down through the anal orifice. Incision is then made at the base of one of the hemorrhoids. At the proximal end of this incision a catgut suture is inserted and tied. A special pair of clamps with long narrow blades is then applied to the hemorrhoid and the suture is continued over the blades of the clamp, and through the base of the hemorrhoid beneath the clamp. This suture is thus passed continuously along the blade of the forceps until the entire base of the hemorrhoid has been included in the suture. The forceps is then removed, and the suture drawn tight and tied. Other hemorrhoids present are treated in a similar manner.

Laplace's Method of Hemorrhoidectomy.—This method is practically the converse of Earle's operation. After the usual dilatation of the sphincters, one of the hemorrhoids is grasped with two clamps, one at its upper and one at its lower extremity. Then, starting from above, the hemorrhoid is gradually cut away from its submucosal attachment from above downwards. At each advance in the incision, the wound in the rectal wall is closed by a continuous suture of catgut. In this manner the wound is sutured as it is made. Other hemorrhoids present are treated in the same way. Laplace recommends constipating the patient for six days after the operation, as he believes healing is so nearly complete by this time that the wound escapes injury from the passage of fecal masses.

The Dressing of Operative Cases

As a final feature of any of these operations, there was formerly employed a "rectal whistle," which consisted of a large rubber tube around which was wound gauze packing, and the entire whistle was lubricated with vaseline. This contrivance, shown in Figure 88, was then introduced into the anal canal, and a final dressing applied. Most fortunately for the sufferers from hemorrhoids, the use of this tube has, to a certain extent, gone out of use. It is assuredly deserving of a place among the relics of barbarism, as a more torturing contrivance can hardly be conceived. Although it was supposed to aid in the escape of flatus and to overcome sphincteric spasm, its objectionable effects far outweigh any advantage it might possibly have. In the great majority of cases of hemorrhoidectomy, I use no tube or contrivance of any kind in the rectum, and rely upon the use of the elevated pelvis position to aid in the expulsion of whatever flatus may occur. In a case where it is considered desirable to use a tube, I use a very small self-retaining tube made for me by C. Bard, Inc., of New York. I call this a flatulence catheter, and it is shown in Figures 89 and 90. This causes no distress and, at the same time, is quite useful in aiding the escape of flatus. It also serves as an easy means of introducing acriflavine or mineral oil into the rectum without



88a*

88b

FIG. 88a and b.—Relics of the yesterday of rectal surgery; rectal "whistles" and "plugs."

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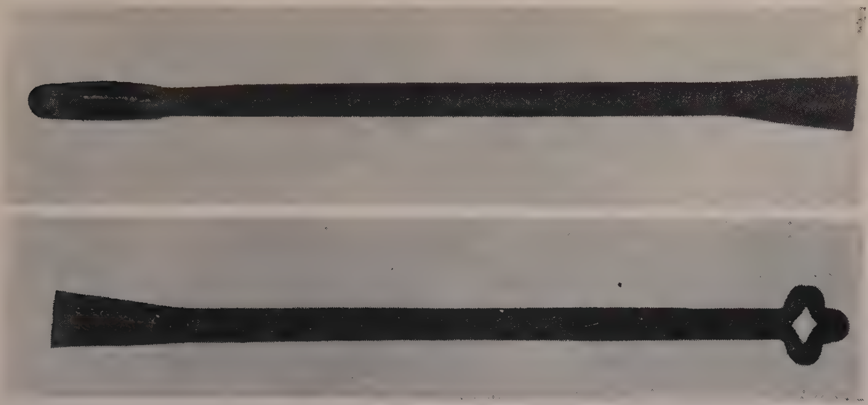
* From Brewer's *Textbook of Surgery,* Lea & Febiger, Philadelphia.

causing the patient the slightest pain. Finally, after the completion of the operation and, if it be considered wise, the insertion of the small catheter tube mentioned, the final dressing is applied. The dressing I prefer above all others is that of clean fluff dressings held in place by a T binder or by the special rectal dressing binder shown in Figure 92. The latter is admirably adapted and specially designed for the purpose of serving as a rectal dressing. The band is a heavy elastic band, upon which are mounted four small clasps. Into these clasps fit the four ends of two tapes, upon which is threaded an absorbent pad. By means of the tapes, pressure may be easily and most conveniently adjusted. All this may be done without the use

89a



Courtesy of C. Bard, Inc., New York, N. Y.

89b

Fig. 89a and b.—Montague flatulence catheter.

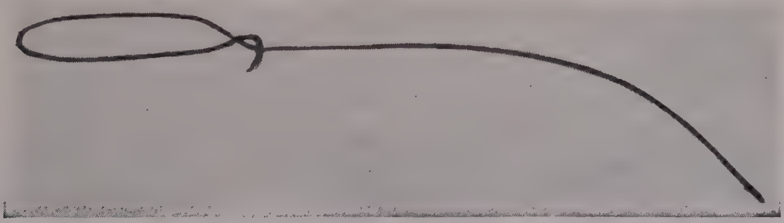


Fig. 90.—Stylet to facilitate introduction and removal of Montague flatulence catheter.

of pins. The pad itself, which is the only part of this binder which becomes soiled, may be discarded and a fresh one is easily obtainable at but a small cost. This is in striking contrast to the use of a T binder. In the first place, dressing is by no means secure when held by a T binder, since the motion of walking, or even moving about in bed, rapidly loosens the T binder. When the lower portion of the T binder is soiled, the entire T binder must be discarded, a procedure both inconvenient and expensive. Moreover, the use of a T binder entails the employment of pins, which may or may not stay in place, and which are often liable to open and stick into the patient. I think it will, therefore, be agreed that the use of this rectal dressing suspensory affords a comfortable, efficient, and economical method of applying dressings to a rectal wound.†

The After-care of Operative Cases

It will be found advantageous to make the after-care of these patients as simple as possible. Rest in bed, preferably in the pelvis high position, for the first day or two is recommended. After this, the patient may lie in his usual manner in bed and get out of bed for a brief time when occasion requires. I do not believe in confining a patient to bed any longer than this, since there is a certain amount of weakness which will result from enforced recumbency quite apart from the effects of the operation. While the patient is up, he must, however, not overexert himself by bending, straining, or lifting, since these actions are certain to cause pain, and may induce hemorrhage.

The dressings should be changed twice daily, as they have a remarkable tendency to become foul-smelling. If a flatulence catheter has been used, it should be removed after the first day, unless there are special indications requiring its continued use.

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† The firm of Johnson & Johnson, New Brunswick, N. J., offers these as Perineal Dressing Belts and Pads.

The withdrawal of this flatulence catheter may be greatly facilitated by the use of a stylet shown in Figure 90. This is inserted through the lumen of the tube and, by pressing upon the cap or end of the tube, the wings are straightened out so that there is no obstruction offered to its withdrawal. Hence there is no pain involved. I have made it a rule to inject at least an ounce of mineral oil into the rectum while the tube is still *in situ* and immediately before its withdrawal. (Fig. 91.) This simple procedure is a great favor to the patient, since it robs the first bowel movement of all its terrors. One may be quite certain that enough mineral oil is in the ampulla of the rectum to afford adequate lubrication of the fecal mass by this means. Supplementary to this, I recommend the free use of a heavy mineral oil by mouth, the usual dose being one tablespoonful after each meal. Should leakage of the mineral oil occur after two or three days, the dose may be reduced to one tablespoonful at bedtime, and continued at that dose. Indeed, it is wise to cut down on the dose of mineral oil as soon as thorough lubrication becomes evident, since its prolonged use, particularly in large quantities, is not infrequently associated with flatulence.

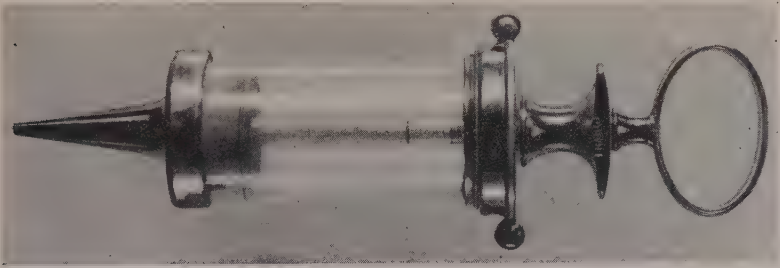


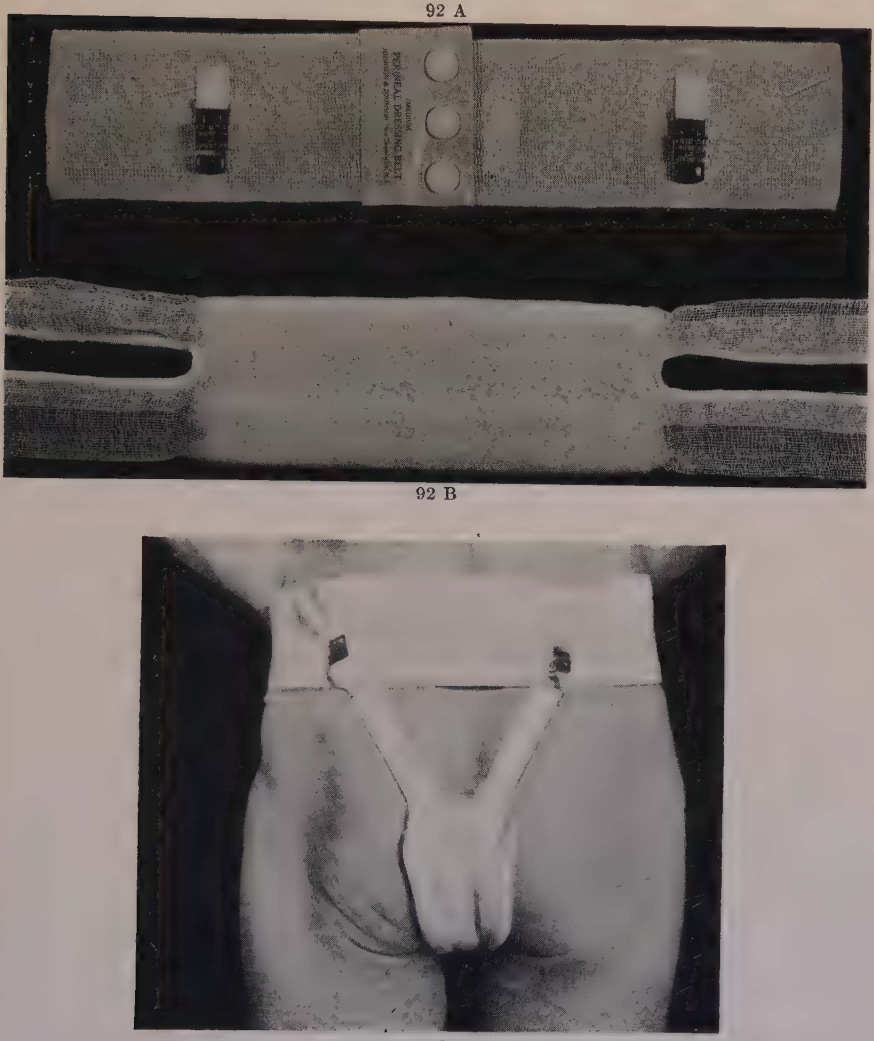
FIG. 91.—Type of syringe useful for introducing oil through catheter.

Other than keeping the part clean, very little local treatment is necessary. I have found it advantageous at times, when soreness is complained of, to gently inject butesin picrate ointment (Abbott) into the anal canal and about the anal margin. This ointment is not only antiseptic, thus reducing bacterial life in this region to a minimum, but it also has definite anesthetic properties. Fluff dressings of gauze are applied, and these are held in place with either the Montague rectal dressing binder or an ordinary T binder.

It is not necessary to restrict these patients to a liquid diet. Indeed, I believe by such a restriction we weaken the patient and induce flatulence. I usually allow my patients a soft diet, with particular restrictions upon the use of condiments and those articles of food which contain small seeds, such as figs, raisins, rye bread with caraway seeds, strawberry and currant jams. As small seeds come through the gastro-intestinal tract without being altered, they are apt to find lodgment in the operative wound and, being foreign bodies, their presence is certain to delay healing.

Catharsis on the third day is not an essential to the after-care of these patients. I much prefer giving a gentle laxative on the third or fourth day and await its action a day or so later. The use of saline cathartics is to be condemned, as they cause much irritation of the rectal mucosa or the operative wound. Compound licorice powder is used by many, though I personally believe it, too, is irritating. If a stronger purge is necessary than the cascara suggested, the use of castor-oil has much to commend it. In the practically tasteless forms in which it is now being offered by most pharmaceutical houses, it is not unpleasant to take and, at the same time, is dependable and efficient.

Should pain arise following the operation, various measures may be directed toward its relief. A hot-water bag, wrapped in a towel for protection of the patient, applied to the perineum often gives relief. Should pain be more intense the use of



92 A

92 B

92 C

Fig. 92.—Montague rectal dressing pad and binder.

allonal (Roche) has much to recommend it. It is given in doses of 7 ½ grs. tablets, and may be repeated in two hours if necessary. If pain is intense, and one has made certain that the cause of the pain rests with the operative wound, and not with the undue retention of either urine or flatus, then one is not justified in delaying further the administration of morphine. I have had particularly good results with morphine sulphate, used synergistically with magnesium sulphate. This is very conveniently available in the form of ampules and carpules containing these substances in solutions. Most of the leading pharmaceutical houses now offer this combination.

One must ever be on the alert for complications. These are dealt with in more detail in a later chapter. They may, to a large extent, be avoided, but the possibility of their occurrence must always be borne in mind. It is well to leave a standing order to have bleeding, as observed on the rectal dressings, reported immediately. It is also wise to leave a standing order for catheterization at the end of eighteen hours if the patient has been unable to void up until this time. Digital dilatation of the anal canal after the tenth day is recommended to obviate the occurrence of stricture or anal stenosis.

Convalescence.—If the operation has been properly performed, after-care carefully attended to, and the patient of normal recuperative ability, convalescence is usually uneventful, and complete recovery is made in ten days to two weeks. To hasten this, as well as to insure it, I usually give a hematinic tonic, such as Basham's Mixture, Liquid Blaud (Lilly), or Arsenoferratose (Merck). I have found the latter particularly acceptable to patients and efficacious in its action. Such medication is particularly indicated in cases where bleeding has been a prominent symptom, and will do much to aid nature replenish the impoverished blood. It will also improve the appetite and contribute to a sense of a regained strength. The prophylactic measures suggested in a previous chapter, especially those concerning diet and the use of mineral oil, will be found of much value in aiding a rapid, successful convalescence.

Recapitulation.—To review briefly the suggestions made for the after-care of operative cases, the following is submitted:

1. Catheterize in eighteen hours if patient is unable to void voluntarily.
2. Rest in bed, preferably in the pelvis high position, for the first two days postoperatively.
3. Dressing should be changed twice daily.
4. Flatulence catheter may be removed after the first twenty-four hours. Immediately prior to its removal, it is suggested that at least an ounce of mineral oil be instilled in the rectum. A stylet should be used to aid in the withdrawal of the flatulence catheter.
5. For soreness following operation, a protected hot-water bag may be applied to the perineum. For moderate pain allonal, 7 ½ grs., may be used. For intense pain morphine, ¼ gr. in a solution of 50 per cent. magnesium sulphate; repeat if necessary.
6. A soft diet is recommended. Foods containing small seeds or spices are to be avoided.
7. Mineral oil to be given by mouth in tablespoonful doses, two or three times daily.
8. When local soreness is complained of, butesin picrate ointment is to be gently injected into the anal canal and around the anal margin.

CHAPTER XIV

THE INJECTION METHOD OF TREATING HEMORRHOIDS

As has been mentioned earlier in this monograph, there are available alternative methods in the treatment of simple internal hemorrhoids. One of these is the injection method. At first consideration, it appears to offer so many advantages over the operative method that one might wonder why the latter is ever used. In the first place, when this treatment is properly employed, there is none of the cutting, which is in itself abhorrent to the patient; secondly, the patient need never absent himself from work, so that from an economic viewpoint, both the patient and his employer are less disturbed by the treatment than when an operation is performed. The reader may possibly interpose the statement that the general surgeon is consistently of the opinion that operation is the *only* real cure, and that the injection method is the method of quacks. If the modern doctor of medicine is going to practice medicine in that manner, then he cannot logically complain at the growth and financial success of charlatan "pathies" and "isms" that fungate like toadstools to fill the gap of service left void by a prejudiced medical mind.

The English appear to have no such problem as the charlatan proctologist. This is perhaps due to the fact that, though conservative in manner, they are nevertheless very open-minded as to any proposed therapeutic procedure. They do not condemn without trial an innovation, nor do they hastily accept it. They give the new method an impartial consideration, a fair trial, and then come to definite conclusions. In this manner they remove the fertile field upon which the charlatan thrives, namely, the vague or poorly known therapeutic method. As an instance of this, the matter of the injection treatment of hemorrhoids is quite apropos. Because the legitimate proctologists were slow to appraise its value, use, and limitations, the charlatan seized upon the method, and has since made capital of it. Yet because of its being used extensively by advertising quacks, a large number of legitimate proctologists decry the method. It is quite obvious that the method must be judged on its own merits and not on the basis of the merits of those who use it. It would be just as logical, or rather illogical, for legitimate proctologists to decry the use of local anesthesia because this same gentry is also using it. The English have, after an eminently fair consideration of the method, adopted it as one of the legitimate methods of treating hemorrhoids. Mr. Graeme Anderson, a man of very good standing and eminent abilities, is foremost among those who speak in its favor. Other eminent English proctologists concur in this. In our own country such eminent men as Terrell, Collier F. Martin, Hirschman, and many others are thoroughly convinced of its uses. From all this, it may be gathered that by neglecting this method, we have given the advertising quack an advantage that he does not deserve. This has not been done in England, where every proctologist feels entitled to use an injection treatment in cases which he selects as being favorable for its employment. Briefly, then, the conservative English have arrived at this conclusion—progressive American proctologists have, too. The others have either not tried the method or are prejudiced by bad results that have come to their notice after they had received injection treatment from quacks. But here an indictment must be brought against the state for allowing non-medical men to practice medicine, rather than against the methods they use. It would be just as absurd for the general surgeon to refuse to use the knee-chest position because that is employed by quacks. Almost any medical method, if used carelessly, or by incompetent men, may produce bad results at times. Perhaps all that the general medical public has been waiting for has been a verdict by those of us who specialize in rectal diseases.

If the medical literature of the last decade upon the subject of the non-surgical treatment of hemorrhoids may be taken as a collective opinion as to value, then we find ample support for the use of this method. Eminent surgeons in many countries throughout the world, including our own, have tried the method over a period of years, and agree in general that in properly selected cases the injection treatment of hemorrhoids may rightfully be included in the therapeutic armamentarium of those physicians who have occasion to treat rectal diseases. In an unostentatious way, in fact almost in a secret manner, the method has been in use since 1871, when Mitchell, in the State of Illinois, first began to use it. During the many years intervening from that year to this, truly enormous numbers of patients have been treated by this method. During those years when it was first instituted, it must be borne in mind that the practice of medicine was a very loosely organized institution, and that great numbers of irregular, and very often ignorant, practitioners travelled around the country using this method. The fact is that an unfortunate percentage of cases so treated did suffer untoward results, and that this early contributed to bring the method into disrepute, but it can be said with perfect reason that there are many other therapeutic measures which have resulted in quite as disastrous results for the very same reasons, *i.e.,* that it was used indiscriminately by those incompetent to practice medicine. The treatment itself in those early days was, in addition, much more crudely formulated than at present. Extraordinarily strong solutions were used, solutions which are used by no one today. Experience has shown that a modification of this method, with the use of a weaker solution, will accomplish what it is designed for. The principle involved is fundamentally correct.

As has been previously referred to, eminent surgeons in various countries throughout the world have tried the method, and have given it their approval, with the qualifications to be noted. Thus Boas, considered by many to be the foremost authority in Germany upon diseases of the rectum, writes of the non-operative treatment of hemorrhoids and concludes, after observing cases from 1915 to and including the year 1919, that the injection method is indicated in preference to operation in cases of uncomplicated internal hemorrhoids, who are suffering with diabetes, nephritis, senility, or anemia. Other authors who comment favorably upon the injection treatment of hemorrhoids are Barth, Bonheim, and Von Noorden. Krukenberg of Munich is similarly enthusiastic over the use of injection treatment of hemorrhoids. Mr. Swinford Edwards, the dean of English proctologists, in an article in the *Practitioner* in 1915 on the injection treatment of hemorrhoids, gives a résumé of the conclusions he has reached after twenty-five years of experience with this method. He believes that many cases of internal hemorrhoids require no operation, since they can be dealt with successfully by the method of injections. He further states that the cases suitable for injection are those of reducible internal hemorrhoids which are uncomplicated by external tags, fissure, or fistula.

English proctologists in general, and by this I mean men of unquestionable standing in their profession and high in esteem in the medical communities wherein they are residents, are very much enthused over the careful use of the injection treatment of hemorrhoids. Sir Gordon Watson and Mr. Mummery at the

St. Mark's Hospital in London freely state their faith in its value in certain types of hemorrhoids. Mr. H. Graeme Anderson is most enthusiastic over the method. Bell, Alexander, and Murphy have likewise stated their success with the injection treatment in various articles in the literature. In England the solution which is almost universally used is the carbolic-glycerine mixture in a strength of 20 per cent. The use of quinine and urea-hydrochloride has never come into favor there, chiefly for the reason that English proctologists are well pleased with the results obtained from the use of the above-mentioned solution.

José M. Jorde, writing in the *Semana Medica* (24:767, June 28, 1917) at Buenos Aires on the subject of hemorrhoids, reports a series of seventy cases, extending over a period of several years, in which treatment by injection of carbolic acid glycerine solutions has given eminently satisfactory results.

Edmundo Escomel, of Lima, Peru, gives favorable opinion as to the value of the treatment of hemorrhoids by injection in his article under that title in the *Chronica Medica* (34:192, June, 1917).

In India the method has been used with success by Hooton, who records his observations on the "Injection Treatment for Piles" in the *Indian Medical Gazette,* Calcutta (56:458, December, 1921).

In France, R. Bensaude, one of the foremost proctologists in that country, gives a favorable opinion as to the practicability of the treatment of hemorrhoids by perivenous injections. This is to be found in the *Bulletin de la Société Médicale des Hospitaux,* Paris.

In Norway, Bergulund has found the non-operative treatment of hemorrhoids to be of value.

Within our own country there have always been champions of this method, since, indeed, it originated here. Terrell, of

Richmond, Va., first introduced quinine urea-hydrochloride as a substitute for the original carbolic-glycerine solution for the injection treatment of hemorrhoids in 1915, and has since, by supplementary reports, confirmed the value of the method. Thus, in 1916, he reported the successful treatment of internal hemorrhoids by the use of quinine and urea-hydrochloride in solution. After judicious experimentation, he came to the conclusion that splendid results were obtainable in selected cases, and later reported 313 cases treated by the injection of 5 per cent. and 10 per cent. solution, the treatment being uniformly successful in chronic internal hemorrhoids with protrusion and bleeding as their chief symptoms. He did not consider that the injection method was suited for inflamed, strangulated, or external hemorrhoids. Collier F. Martin, of Philadelphia, has used the carbolic-glycerine mixture for the last ten years, and still uses it. It has met with praiseworthy success in his hands. Hirschman, of Detroit, has used the method with equally gratifying success, and Earley, of Denver, likewise has found the injection method of treatment a valuable adjunct in the treatment of hemorrhoids. Jackson, of Fall River, Mass., has had many years' experience with this method, as had also Fansler, of Minneapolis. Both consider the method a valuable addition to the therapeutic armamentarium of the proctologist.

If it then be agreed that the qualified practitioner of medicine is justified in using any method of treatment from which he may reasonably expect to benefit his patient, then the following description of the injection method will be appropriate. Indeed, that the method is legitimate and capable of favorable results may be inferred from the fact, referred to elsewhere, that many medical men, and even members of the medical faculty, request this particular treatment when so unfortunate as to be afflicted with hemorrhoids themselves.

At this moment it is well to dispel any suspicions on the part of the reader that there is anything mysterious about the injection treatment of hemorrhoids. The substances used are extraordinarily commonplace chemicals, and no unattainable degree of skill is required for the proper injection. Indeed, the method is simplicity itself. All that are required are pure chemicals—as indeed we demand in other medicines—and a knowledge of the nature and structure of hemorrhoids. Any legitimate practitioner may easily obtain the one and readily acquire the other. The theory of the injection treatment of hemorrhoids is as follows:

The injection of a moderately irritant substance around the varicose hemorrhoidal venules which constitute a hemorrhoid will excite a productive inflammation in the adventitia or outer coat of the vein and in the tissue immediately surrounding it. This will lead to a gradual periphlebitis and phlebitis. Contraction of the connective tissue thus produced induces a steady diminution of the calibre of the vein, until, at last, complete obliteration of the vein results. The hemorrhoid, thus, is no longer distended with blood, and as organization proceeds, it becomes converted into a fibrous mass of tissue. Thus the hemorrhoid—a hollow vessel distended with blood—becomes converted into a solid mass of non-vascular structure, and the hemorrhoid has been cured.

In practice, these various changes may be noted with ease. Following an injection, there is within a few hours an inflammatory reaction evidenced by swelling, redness, heat. Little, if any, pain is felt if any of the solutions below mentioned are used, because of their anesthetic properties. In twelve to eighteen hours these changes subside. The swelling diminishes and loses its color. In a few days the pile begins to show evidence of fibrous tissue formation. The palpating finger detects the beginning of the cordlike sclerotic vein directly under the mucous membrane. Hemorrhage usually stops after the first injection. At times the checking of hemorrhage from hemorrhoids that had been bleeding profusely appears miraculous. Subsequent injections are followed by less marked reactions, but the sclerotic vein becomes more and more clearly defined as a cordlike structure extending from the anal canal upward into the rectum.

This is the usual train of events, and in properly selected cases, if proper solutions are used, and are injected properly, there will never be untoward results.

Selection of Cases

More important by far than any other detail in the injection treatment of hemorrhoids is the proper selection of cases. This is a prime requisite which must be satisfied if justice is to be done to the patient and to the method. Should we employ the method in an unsuitable case unpleasant and even serious complications may ensue. As such may be mentioned sloughing, gangrene, abscess, fistula formation, liver abscess, or even septicemia.

The termination, therefore, of faulty selection of cases is that we not only fail to cure the hemorrhoid, but we run the risk of inflicting injury to our patient. Either or both of these possible results cause a method to be brought into disrepute, which, if properly given in appropriate cases, will give the most gratifying results.

A somewhat similar condition existed for a time when salvarsan was first introduced. It was used in almost every clinical condition known, sometimes with alleged good results, but time gradually established its positive efficacy along the lines it was intended for, and its entire lack of panaceal properties. So, too, with the injection of hemorrhoids—the method has its applications, and these we should appreciate. It likewise has its limitations, and these we should recognize.

What then are the indications for the employment of the method? The present status of medical opinion on the subject is as follows: *Simple uncomplicated internal hemorrhoids are the only ones which are suitable for the injection treatment.* This class of case is, then, the only type in which we may reasonably expect results, and which we can employ with confidence of no untoward results. By consulting the schematic arrangement of treatments on page 132, it will be noted the only place on that diagram given the treatment is in the instance of simple internal hemorrhoids.

At the joint meeting of leading American and English proctologists held July, 1924, in London, before the Royal Society of Medicine, the consensus of opinion was essentially along these lines.

Mr. H. Graeme Anderson, leading exponent of the method in Britain, stated that the injection method of treating hemorrhoids is applicable only in the case of uncomplicated internal hemorrhoids. Dr. J. Halton, of Sarasota, Florida, uses " the method only in carefully selected cases of uncomplicated internal piles, never in cases of old indurated or mucocutaneous piles or in those of external thrombotic piles." Mr. W. S. Perrin, of Newcastle, England, stated that he had " come to the conclusion that the method is only applicable in most cases of uncomplicated piles, provided they are not of very large size." Mr. Cecil Rowntree, of London, England, said he considered that this method gave admirable results in those cases of uncomplicated hemorrhoids in which hemorrhage was the chief or the only symptom.

Aside from such expressions of opinion at this meeting, it is the firmly established conclusion among modern rectal surgeons here in America, that the only type of hemorrhoids in which the injection treatment is permissible is the simple uncomplicated internal hemorrhoid.

Quite naturally, the reverse of this statement gives us the contraindications for its use. The injection method is not to be used in any case of external hemorrhoids, skin tabs, " sentinel pile," nor in any case of internal hemorrhoids which are inflamed, ulcerated, thrombotic, or gangrenous.

To sum up the foregoing we may briefly state:

Indications: Simple internal hemorrhoids.

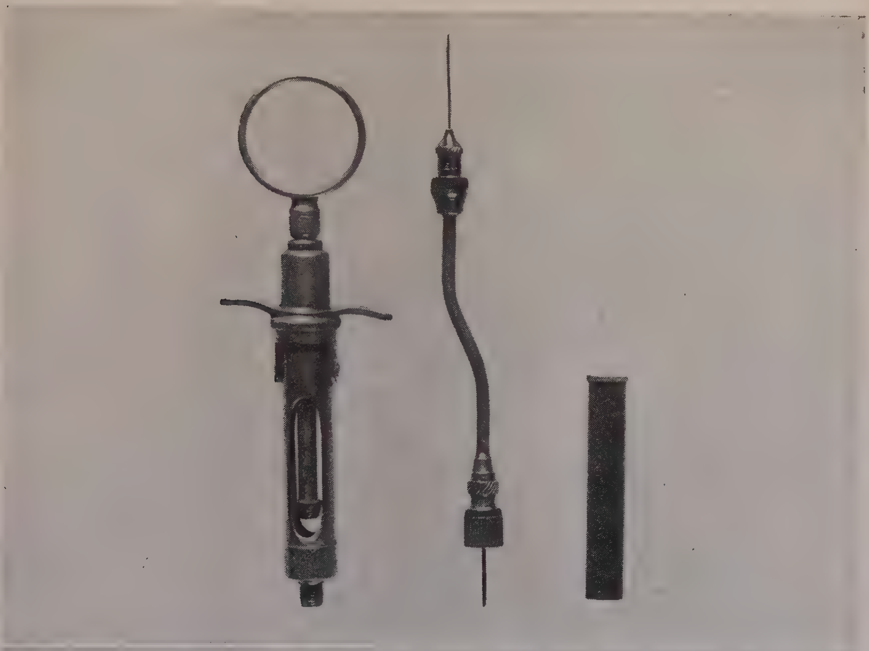
Contraindications: External hemorrhoids of all varieties; complicated internal hemorrhoids.

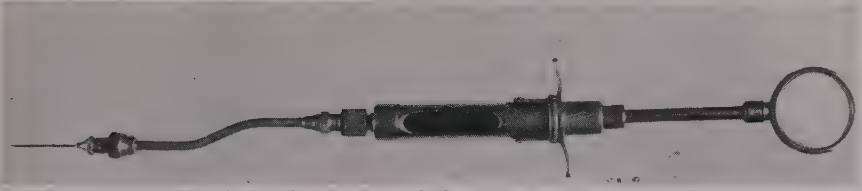
Preparation.—The less formal preparation there is for this treatment, the less disturbed the patient is by it. Mere cleansing of the mucosal surface through which the injection is to be made by brushing it with cotton on an applicator is quite sufficient. The idea of cleansing cathartics or cleansing enemas prior to the treatment is grossly erroneous since both procedures are eminently adapted toward stirring up all manner of infective material in the colon, putting it in an aqueous suspension, so that it may readily be conveyed to the minute break in the mucosa caused by the needle. The idea is surely absurd, though I know for a fact that there are many surgeons who use this as routine procedure. To my mind it seems inexcusable to disturb the normal functioning of the entire intestinal tract in order to "clean" the lower 2½ to 3 inches of it. Particularly illogical does this appear when the ready accessibility of this area is considered.

In my own practice I merely insert my operating proctoscope, and, by means of a few large cotton swabs, thoroughly cleanse the mucosa of the mucus secretion which is usually found there. When the mucosa is rubbed dry, I proceed to inject my solution, confident that the area is quite as clean and sterile as it ever will be—which, it must be realized, is not very sterile at that. But regardless of what care is taken to " sterilize " the area, one may be sure that one minute after the procedure it will not be sterile. Some paint the area through which the injection is to be made with 3 ½ per cent. solution of iodine or alcohol, but my experience with mere dryness has been quite as satisfactory. I have never had an infection result from the injection treatment.

Position.—Either the knee-chest or the Sims' position may be used while hemorrhoids are being injected. As a matter of fact any of the usual positions may be used, but these are the positions of choice—the knee-elbow for male patients (Fig. 21) and the Sims' or left lateral position for female patients. (Fig. 22.) After getting the male patient in knee-chest position, the speculum is inserted, and the patient is then asked to rise to a knee-elbow position. This brings the hemorrhoids directly into view. In the instance of a female patient, the hemorrhoids may be brought well into view after inserting the speculum by placing a pillow under the patient's shoulders and having her bear down as if at stool.

Instruments.—Injections may be made with any small syringe and needle, but where it is possible to select the type of syringe, the following suggestions will be of service. An all-metal syringe is never to be used for the reason that one cannot be certain that it is clean. Thus, while it may be boiled sterile, yet there may be foreign particles in the barrel which will clog the needle, or if small enough to pass through the needle, they will be injected into the hemorrhoid, which, of course, is undesirable. A glass syringe, then, of 1 ½ or 2 cc. capacity is, therefore, preferable. The ordinary syringe used by dentists for inducing local anesthesia may be used with satisfaction. The only disadvantage of these syringes is their ready breakability, particularly during sterilization. To meet the disadvantages above mentioned, as well as to combine the durability of the all-metal syringe with the visibility of the all-glass syringe, I have contrived the following arrangement, which seems ideal for the injection treatment of hemorrhoids. The arrangement, in brief, is the utilization of the carpule found





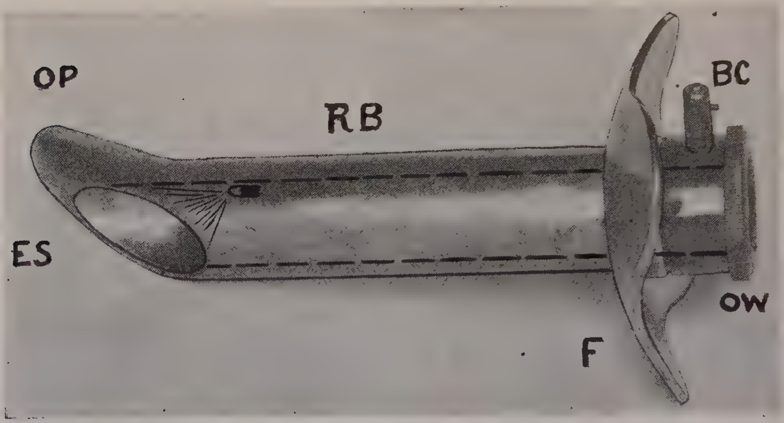
Courtesy of Cook Laboratories, Chicago, Ill.

93 b

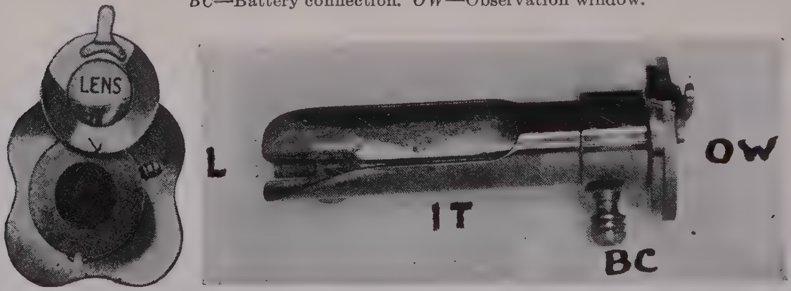
Fig. 93 a.—Outfit or special syringe adapted for use in the injection treatment of hemorrhoids.
Fig. 93 b.—Hemorrhoid injection syringe assembled for use.

so useful in many other injection procedures, such as local anesthesia. (Fig. 93.) In the carpule (obtainable at almost any pharmacy) is the solution sterile and standardized according to one of three formulæ in which it is manufactured. Each carpule contains 1 cc. of the solution. This carpule fits into the syringe like a cartridge fits into a gun. Neither of these parts need be sterilized. Fitting onto the syringe is an adaptor for either a screw tip or Luer tip. To this adaptor I attach an

94a



Phantom view.
OP—Obturator point. *ES*—Examining slit. *RB*—Rectoscope barrel. *F*—Non-roll flange. *BC*—Battery connection. *OW*—Observation window.



94b
Inner tube light carrier of Montague rectoscope.
L—Light. *IT*—Inner tube. *BC*—Battery connection. *OW*—Observation window.

Figs. 94a & 94b.—Rectoscope especially designed for the Injection treatment of Hemorrhoids.

elbow extension, and upon this is mounted the needle—a 24 gauge for aqueous solutions and a 20 gauge for oil solutions. The immense convenience and economy of this outfit (Figs. 93a and b) must be apparent for the reason that a standardized sterile solution is always ready for use, thus avoiding the trouble in preparing fresh solutions. Moreover, the solutions are tested as to stability, and being hermetically sealed, remain stable. The economy of the plan is evident since no more solution is used than is needed, and should only a portion of a carpule be used, the remainder may be saved, since the carpule seals itself upon removal. Should more than 1 cc. solution be required, the needle may be kept *in situ* while the empty carpule is removed and a full one inserted.

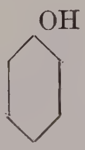
This outfit, an anal speculum, either of the Brinkerhoff or the type shown herewith, and a few cotton applicators, are all the instruments necessary for the injection treatment of hemorrhoids. The use of my special rectal dressing tray and pan is a matter of convenience, but not of necessity. It will be found useful to arrange the instruments and applicators on, and the pan will be found useful as a receptacle for soiled applicators.

Solutions

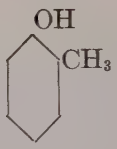
The solutions which I use and recommend are, in order of preference:

		G.–cc.	
Cresylic acid	ʒiiss	10	0
Glycerine	ʒx	40	0
Distilled water	℥iss	50	0
or			
Quinine urea-hydrochloride	ʒi	5	0
Epinephrin (1:1000)	ʒss	2	5
Distilled water	℥iii	100	0
or			
Carbolic acid	ʒiiss	10	0
Olive oil	℥iii	100	0

These are simple solutions of definite and reasonable strength. I much prefer them to the formulæ mentioned below. My reasons for this are that the use of more than one active drug in any one formula is unnecessary. Secondly, many of the formulæ mentioned on pages 201 and 202 are too strong for the purpose for which they are intended, *i.e.,* to excite a mild chemical inflammation in the tissues. When we use a solution above 20 per cent., we are running the risk of producing chemical necrosis rather than inflammation. The present view of surgeons using this method is that 10 per cent. is quite strong enough. As a matter of further safeguard, I use in my own practice cresylic acid in preference to carbolic acid since, although its properties are identical with carbolic, its poisonous qualities are much less.



(phenol)
carbolic acid



(tolyl hydroxide)
cresylic acid

Quinine urea-hydrochloride is, of course, far less poisonous than either of these, but in my opinion is not as efficient. There is no practical risk involved in using a 10 per cent. solution of either cresylic or carbolic acid in this treatment. In using the quinine solution it is well to bear in mind that some people have an idiosyncrasy for this drug. The patient can usually tell if such is the case, and in that instance one of the other drugs must be used.

Composition of Solution.—Many substances have been tried in the injection treatment for hemorrhoids, but of them all carbolic acid has proven the most satisfactory, and has been the basic drug of the majority of successful formulæ. Quinine urea-hydrochloride, which has also been successfully used, is the single exception. To give an idea of the variety of substances used, I might mention that fld. ext. of ergot, persulphate of iron, perchloride of iron, salicylic acid, alcohol, adrenalin, and even hydrochloric acid have all been experimented with. Working on the theory that coagulation could be induced by the introduction of one of the common hemostatic substances, I tried out horse serum, coagulen, and thromboplastine on a series of over thirty cases, but my results were more alarming than gratifying, for in four of the cases I promptly obtained evidences of anaphylaxis. Two cases developed an anaphylactic urticaria, and one even showed signs of anaphylactic shock. These untoward results instilled a timidity in me that prevented further trial. I merely mention this here as a warning to any of my colleagues who ever hit upon the idea of using substances of this character.

To give an idea of the variety of formulæ which have been used, and in some quarters are still being used, the following list is given:

		G.–cc.	
St. Marks Hospital (London)			
Carbolic acid	gr. xlviii	2	8
Glycerine	fl. ʒii	8	0
Distilled water	fl. ʒii	8	0
Terrell			
Quinine urea-hydrochloride	grs. xv	5	0
Distilled water	fl. ℥iii	100	0
Fenn			
Carbolic acid			
Fl. ext. ergot	āā fl. ℥i	30	0
Shuford			
Soda biborate			
Salicylic acid	āā ʒi	4	0
Glycerine	fl. ℥i	30	0
Carbolic acid	fl. ʒiii	12	0
Yount			
Carbolic acid	grs. xxiv	1	5
Distilled water	fl. ℥i	30	0

		G.–cc.	
Powell			
Carbolic acid	grs. xiii		8
Tr. thuja	fl. ʒi	4	0
Distilled water	q.s. ad. fl. ℥ss	15	0
H. Graeme Anderson			
Carbolic acid	fl. ʒiiss	10	0
Glycerine	fl. ℥iii	100	0
Morley			
Carbolic acid	mxlviii	3	0
Ext. hamamelis			
Distilled water	āā fl. ℥ss	15	0
Hamilton			
Carbolic acid	fl. ʒiiss	10	0
Oil of sweet almonds	fl. ℥iii	90	0
Collier F. Martin			
Phenol Boboeuf			
Distilled water	āā fl. ʒi	4	0
Should be used freshly prepared and filtered. Fluid is to be discarded if it becomes opaque.			
Mitchell			
Carbolic acid			
Olive oil	āā fl. ℥i	30	0
Brinkerhoff			
Carbolic acid	fl. ℥i	30	0
Zinc chloride	grs. viii		5
Olive oil	fl. ℥v	150	0
Gant			
Carbolic acid			
Glycerine			
Distilled water	āā fl. ʒi	4	0
Overall			
Carbolic acid			
Fl. ext. ergot			
Olive oil	āā fl. ℥i	30	0
Agnew			
Carbolic acid	fl. ℥i	30	0
Distilled water	fl. ʒii	8	0
Soda biborate and lead glyceride	fl. ʒvi	24	0
Tuttle			
Carbolic acid	fl. ʒii	8	0
Salicylic acid	ʒss	2	0
Soda biborate	ʒi	4	0
Glycerine	q.s. ad. fl. ℥i	30	0

A perusal of the above formula will reveal the fact that the active principle of each is carbolic acid, or in the case of my own, a derivative of carbolic acid. The strength of this drug used varies from 5 per cent. in that of Yount's to as high as 50 per cent. in Mitchell's. The single exception is Terrell's formula, in which quinine urea-hydrochloride is used. As an added factor of safety, I have used cresylic acid in preference to carbolic acid, although it is essentially similar in chemical structure. Thus, while phenol is $C_6H_5.OH$, cresylic acid is $C_6H_4.OH.CH_3$. In general properties it is similar to phenol, but is much less toxic and irritant. This is a decided advantage in the event that some of the solution (as not infrequently occurs) should leak back through the injection orifice.

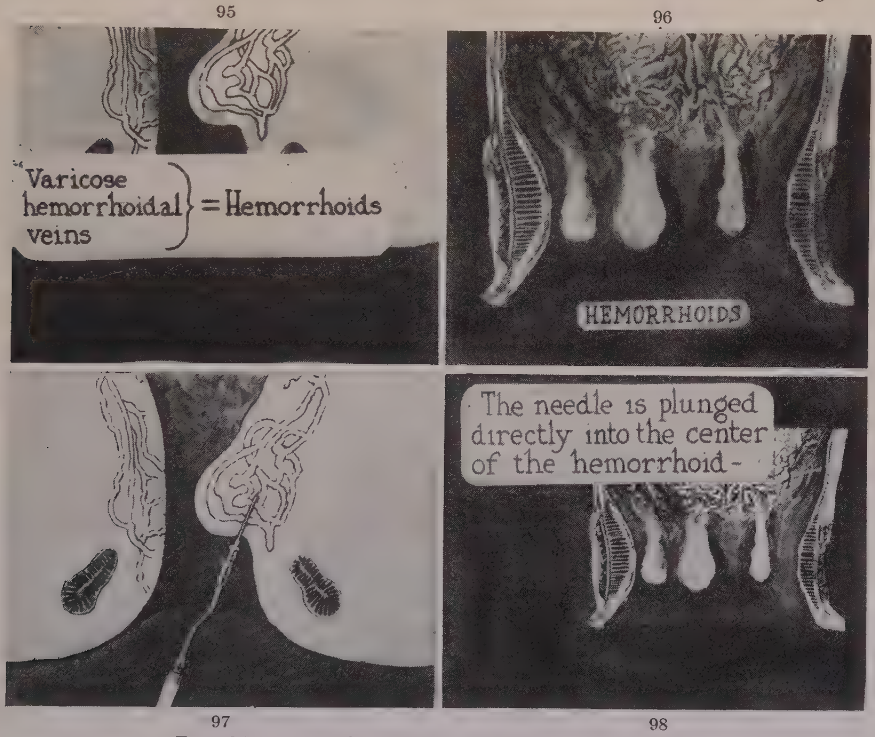
Strength of the Solution.—The object of introducing either of these substances into the substance of a hemorrhoid is to excite a mild chemical inflammation, sufficient to bring about the production of fibrin in the interstitium, and consequent organization. It is, therefore, evident that our solutions must be strong enough to excite this mild degree of inflammation and yet they must not be so strong as to induce a localized tissue necrosis with consequent slough. This, in short, is the difference between the modern view of the injection treatment of hemorrhoids and the view of former days. A few years ago, it was considered necessary to produce chemical necrosis and sloughing in order to obtain a good result. Through the chemical experiments of various investigators, we now know that the absorption of the products of tissue decomposition is highly injurious, if not absolutely dangerous, to the patient. And clinical experience has proven that the obliteration of hemorrhoids may be safely accomplished by the use of what would be formerly considered a weak solution, *i.e.*, a 10 per cent. solution. The use of the weaker solution may require more time, and take more treatments, but is infinitely safer to work with. This too is in consonance with the conclusions now held by leading advocates of the method. Thus, at a symposium on the injection treatment of hemorrhoids, held at a joint meeting of the American Proctologic Society and the Royal Society of Medicine in London in 1924, Graeme Anderson stated that he had only seen bad results in the injection treatment of hemorrhoids by this method when solutions of more than 20 per cent. strength had been used. Swinford Edwards concurred in this statement, and stated that his observations and experience with the method extended over twenty-five years. J. Halton, of Sarasota, Fla., mentioned the uniform success he had had with the use of weak solutions (5 per cent.) of quinine and urea-hydrochloride, and advised against the use of strong solutions. Mr. Perrin gave the results of treatment in 380 cases of uncomplicated piles by injection with 10 per cent. carbolic solution, and the solution used in that strength was productive of satisfactory results.

Other surgeons present concurred in this view. The conclusions, therefore, that may be derived from the remarks and comments made were based upon the collected experiences of eminent surgeons from both the United States and Britain. We may, therefore, accept with considerable confidence the opinions expressed there, as there can be no question as to the calibre of the men using the methods nor of the time taken in clinical test.

To recapitulate these conclusions: The injection method of treatment of hemorrhoids is one which clinical experience has proven to be capable of yielding good results when properly applied. The chief care to be used rests in the proper selection of cases, and the chief danger to be avoided lies in using too strong a solution.

Procedure.—With the patient in the proper position, a speculum is inserted, and the hemorrhoids are brought into view. The field is surveyed and certain of the hemorrhoids are selected for injection.

When more than one is to be injected, it is advisable to inject the lower one first, since it is certain to be obscured by blood or solution escaping after injection of one higher. As a rule, two hemorrhoids may be injected at each visit, and these are conveniently placed one week apart. The injection may be made more frequently, if circumstances demand, but the rate should always be governed by the local reaction and the patient's general condition.


95
96
Varicose hemorrhoidal veins = Hemorrhoids
HEMORRHOIDS
The needle is plunged directly into the center of the hemorrhoid -
97
98

Figs. 95 to 102.—The injection treatment of hemorrhoids.*

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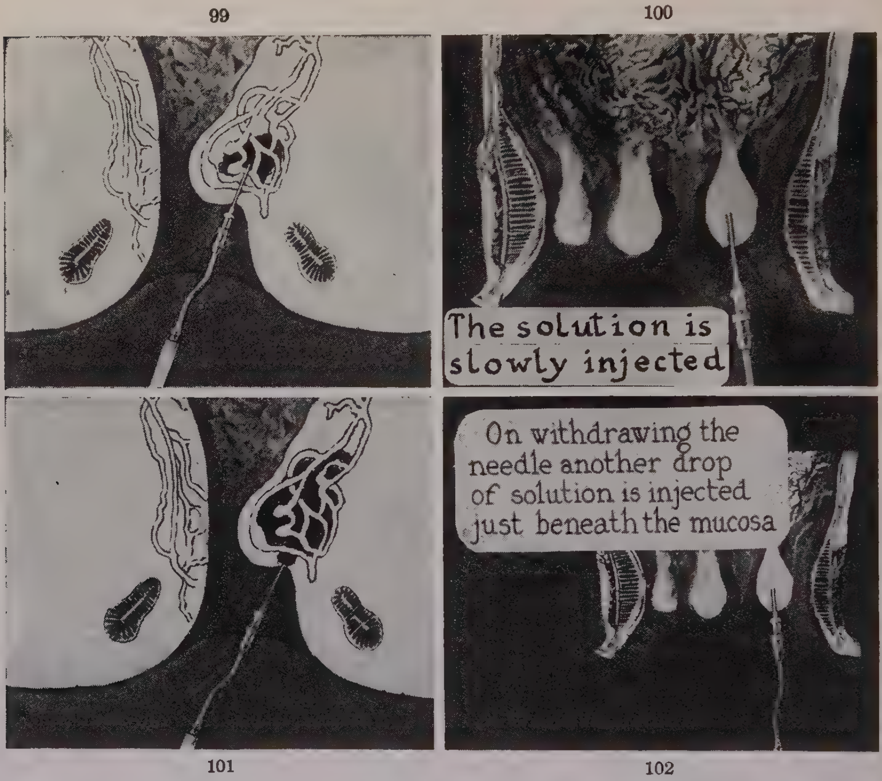
* These and subsequent pictures in this chapter are taken from my "Motion Picture Course in Proctology."

It is well to have all the instruments, applicators, syringe, and carpules arranged on a tray prior to arranging the patient on the table, since the position is at best uncomfortable, and to not a few embarrassing. Moreover, the dispatch with which the treatment is administered creates a favorable impression on the patient, and relieves him of those anxious minutes of anticipation which are more painful than the moment which the treatment actually takes.


99
100
The solution is slowly injected
On withdrawing the needle another drop of solution is injected just beneath the mucosa
101
102

Figs. 95 to 102.—The injection treatment of hemorrhoids.

The needle is then plunged into the centre of the pile, to a depth of about 1 to 1 ½ cms., depending on the size of the hemorrhoid. (Figs. 95 to 98.) With the needle at the centre of the hemorrhoid, the solution is slowly injected. The amount to be injected varies, of course, with the solution used. Thus, when we use the quinine urea-hydrochloride solution, more may be used than when the carbolic or cresylic acids are used. The best guide as to the proper amount is the appearance of the hemorrhoid. As soon as it shows the slightest blanching, the injection should be stopped, as the proper point has been reached. It is far safer to inject too little than to inject too much, since in the first instance the only result is the necessity of reinjecting at a later date, whereas in the latter instance painful and dangerous sloughing will occur, much to the patient's distress and to your ultimate detriment. It is carelessness on this point that is one of the reasons that recognition of the value of the method was late in arriving. After the proper amount of solution has been injected, the needle is slowly withdrawn, and just before its final withdrawal a small drop of the solution is injected to seal the needle wound and minimize the escape of either blood or solution. (Figs. 99 to 102.) One advantage of the syringe, I suggest, is that there can be no aspirating of the injected solution back into the syringe for the reason that the piston moves in only one direction, *i.e.,* forward.

After injections have been made into the hemorrhoids selected, it has been my custom to inject an antiseptic and anesthetic ointment like butesin picrate, and about an ounce of either paraffin oil or vaseline, into the rectum. This I do for two reasons: Firstly, to protect the anal and lower rectal mucosa from the action of any solution which may possibly leak out of the injection wounds, and secondly, to lubricate the passage of the first bowel movement following the treatment. I believe this minimizes the occurrence of prolapse of the hemorrhoids following treatment.

IMMEDIATE RESULTS.—The immediate results following the injection of hemorrhoids with one of the three solutions recommended by the author are as follows:

If the proper technique has been used, no pain should follow immediately upon the injection of the fluid, since proper procedure requires the introduction of this fluid above the area supplied by sensory nerves. It is the normal course of events, however, for the injected hemorrhoid to swell a trifle following the injection, and to give rise to a slight sense of fulness in the rectum. Occasionally dull pain is felt in this region. Ordinarily, it never amounts to anything severe. Not uncommonly, the swollen hemorrhoid prolapses through the anal orifice, and in this event, especially in the presence of a spastic sphincter,

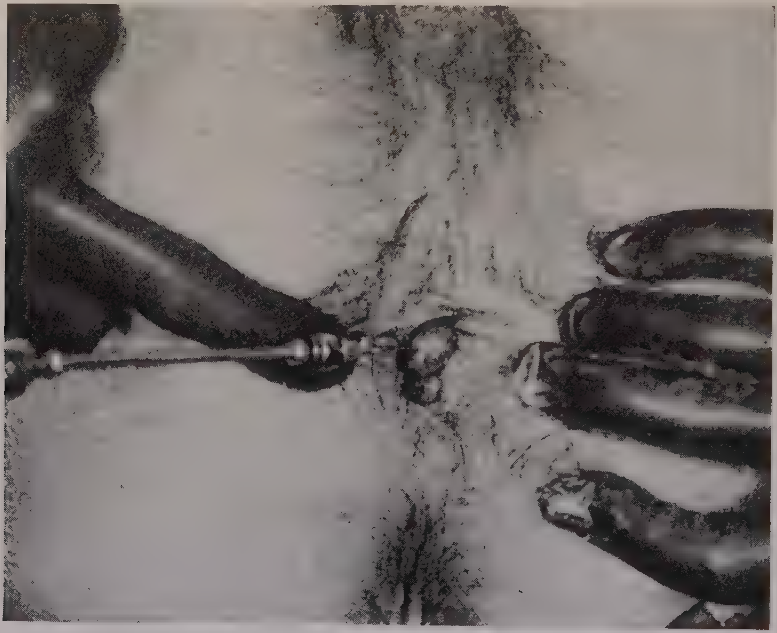


FIG. 103.—Some prefer to inject the hemorrhoids after prolapsing them.

moderate pain may result. However, if the prolapsed hemorrhoid be soon replaced, the pain immediately ceases. These are the chief immediate results incident to the injection treatment of hemorrhoids.

ULTIMATE RESULTS.—In the course of a day or two, the hemorrhoid, which at first became swollen, shows a distinct shrinking and hardening of its tissues incident, as we have seen, to the deposition of fibrin in the interstitial tissues. After a week, this fibrous mass has shrunk very considerably, and at times is scarcely perceptible. In other cases, it may be perceptible as a palpable cordlike structure. In either event, the hemorrhoid has ceased to exist, and in its place is a small mass of fibrous tissue covered by mucosa.

AFTER-CARE.—The after-care of these cases is extremely simple, and consists chiefly in aiding nature and avoiding unnecessary procedures. Thus, we recommend to the patient the daily ingestion of at least one-half ounce of mineral oil in divided doses. This is best given, one tablespoonful morning and evening, after meals or upon arising and upon retiring. The object of this, which is merely a bland inert oil with no chemical action on the intestines, is merely to lubricate the fecal mass as it passes through the rectal outlet. If this measure is not sufficient to induce a normal bowel movement every day, the use of castor-oil as a cathartic has much to recommend it. It does not irritate the mucosa, as does compound licorice powder, nor does it induce pelvic congestion, as aloes does. Given in the tasteless form now offered by most reputable pharmaceutical houses, this remedy can be given with assurance of results, and without complaint on the part of the patient. It is well to caution the patients against straining at stool, and if their occupation is that of a laborious type, it is suggested that they avoid heavy lifting or any other procedure involving an increase in the abdominal pressure. I have also found it useful and comforting to the patient to suggest the injection of a mild antiseptic and anesthetic ointment, like butesin picrate, into the anal canal immediately prior to evacuation. It will thus be seen that the after-care of these cases is extremely simple, and I can assure you that it is only when an attempt is made to make it complicated as, for instance, by the indiscriminate use of hot sitz-baths, that any trouble results.

Conclusions

1. The injection method of treating hemorrhoids is a legitimate and efficient method of treating properly selected cases of hemorrhoids. There is nothing unethical about the method.
2. By properly selected cases are meant simple internal hemorrhoids, uncomplicated by infective or traumatic changes within the hemorrhoid itself nor by coincident anorectal disease.
3. The preparation, procedure, and after-care of these cases is simple, and requires no special skill. Whatever skill is required consists in the judgment of what cases are suitable for this particular treatment.
4. The solutions recommended are three:
    1. 10 per cent. cresylic acid in glycerine and water.
    2. 10 per cent. carbolic acid in olive oil.
    3. 5–7 per cent. quinine urea-hydrochloride and epinephrin in water.
5. Finally when we, as legitimate and ethical practitioners of proctology, contemplate the truly enormous numbers of patients who turn to the quack for this type of treatment, we must naturally inquire as to the cause. The reason, I believe, rests in the fact that most of us assume the

attitude that there is but one treatment for hemorrhoids, and that is operation. By our own persistence in this attitude, we lead the laity to expect non-operative treatment from only one source—the advertising "pile doctor." There is no secrecy to the method, nor does any one practicing proctology lack the requisite skill; all in all, we have no excuse for neglecting the method. It appears to me that by offering the laity injection treatment as an alternative to operative treatment, we could speedily deprive our outlaw confrères of their most valuable asset.

CHAPTER XV

THE USE OF RADIUM IN THE TREATMENT OF HEMORRHOIDS

Among the various therapeutic procedures used in the treatment of hemorrhoids, that of radium is perhaps the most recent. In so far as our knowledge of the action of radium emanation upon living tissue permits, it may be said that in mild doses, the emanation is gently irritant, and in slightly larger doses, particularly if the exposure is prolonged for a definite length of time, the emanation is capable of inducing fibrosis. Naturally, if the dose be increased beyond this point, local necrosis occurs. It will thus be seen that the idea of attempting to treat hemorrhoids by inducing fibrosis with the aid of radium is in keeping with both natural and artificial methods attempting its cure. For it is a matter of common observation that occasionally simple, uncomplicated hemorrhoids tend toward spontaneous cure. In such instances, nature attempts to effect a cure by laying down considerable fibrous tissue around the varicose hemorrhoidal vessel, and the progression of this process eventually results in the obliteration of the vein, and consequent eradication of the hemorrhoid. Of course, in the majority of cases, because of the occurrence of some complication, this process never arrives at completion. But the fact remains that irritation of the hemorrhoid tends to produce the above-mentioned fibrosis and obliteration of the hemorrhoid.

It is upon this principle that the injection treatment of hemorrhoids is based. After a rigid and thorough trial extending over many years, the latter treatment has been accepted as a useful and approved procedure in the treatment of simple hemorrhoids. In the injection treatment of hemorrhoids, an irritant solution is used. The majority of such solutions in common use usually contain carbolic acid or quinine urea-hydrochloride in various strengths. Toward the use of these substances, injected into the cellular tissue, there has, however, been a certain amount of antagonism. When unskilfully administered, bad results can occur, either from the injection of the substances directly into the blood stream or, in the event of ulceration of the hemorrhoid following the use of these substances, by the absorption of infective material into the portal system with the production of liver abscess. While the frequency of these untoward results has, in my opinion, been greatly exaggerated, the fact remains that reputable men have reported such cases.

It, therefore, seems reasonable to assume that any method offering a safer method of producing fibrosis without the injection of chemical substances in the cellular tissue will find a field of utility.

Among the earliest attempts to utilize radium in the treatment of hemorrhoids was that of Von Noorden and Caan. In an article, "Radium Treatment of Hemorrhoids," in the *Therap. Monatshefte,* 29:315–319, they report a series of nine cases in which they employed the element radium. Some of these cases had prolapsed hemorrhoids. The technique they used was as follows: Mesothorium bromid or radium bromid (50 mg.) was applied to internal hemorrhoids by means of brass cylinders, from 3 to 5 cm. long, and with walls 3 mm. thick, covered with a rubber finger-cot. For intermediate and external hemorrhoids the applications were made with round flat brass containers.

As must be evident, this method is open to much criticism, and particularly the serious criticism of impracticability so far as general usage is concerned. In the first place, the element radium is not readily obtainable since its great cost practically limits it to the large institutions. Secondly, it is awkward to transport, and when used must be heavily screened to prevent effects on structures other than the one toward which treatment is directed. There is a method, however, which I believe overcomes the disadvantages met with in the use of the radium element in this connection, and yet retains the advantages which a physical agent of this type can give us. The method to which I refer is one which I have found applicable in the treatment of simple internal hemorrhoids. It consists in utilizing radium emanation seeds, instead of the actual element. It is readily admitted that this method has as yet not been subjected to a long enough trial to come to definite conclusions as to its value. I am, however, sufficiently confident of its ultimate recognition to repeat here, with additions, a preliminary report read before the American Proctologic Society, May 25, 1925.

In attempting to apply this fibrosing action of radium rays to the problem in hand, radium emanation seeds were chosen in preference to the use of radium in a tubular or plaque form. The advantage of the former consists in the fact that the irritant action of the radium emanation may more definitely and efficiently be directed to the spot where its action is desired. With this in view, I commenced a series of clinical experiments as to the value of radium emanation seeds in properly selected cases of hemorrhoids. By " properly selected," I mean uncomplicated or simple internal hemorrhoids. This means those in which neither prolapse, ulceration, nor thrombosis had occurred. Simple internal hemorrhoids were the only type treated in the series described herewith.

The technique used is simplicity itself, and merely consists in implanting, through a proctoscope, four to six seeds of a known strength along the base of the hemorrhoid. (Fig. 104.) The strength used in all of these cases was one-fourth millicurie radium emanation seeds. It is quite possible that the use of seeds of greater strength may induce a more rapid fibrosis, but in this series I preferred to use a strength which experiment has shown will safely produce fibrosis without danger of producing ulceration or necrosis. After the implantation, the occurrence of fibrosis is awaited, and in the meantime the patient is kept upon a non-constipating diet and mineral oil is liberally administered.

In all, thirty-five cases were thus treated at the Rectal Clinic, University and Bellevue Hospital Medical College. The effects noted were the appearance of definite fibrosis in five to nine days following implantation, the cessation of bleeding, and the amelioration of subjective symptoms. Upon palpation areas of fibrosis could very definitely be determined. The hemorrhoid had definitely decreased in size. After two weeks had elapsed this fibrosis appeared to have progressed even more, and the hemorrhoid had become a fairly hard nodule. After three weeks the height of fibrosis seemed to have been reached, and the condition remained about the same from thence on to the sixth week, at which time the nodule and the hemorrhoid had disappeared. In twenty-nine of the thirty-five cases of this series, the above-described process of gradual fibrosis and shrinkage of the hemorrhoid occurred. In four cases slight prolapse took place within forty-eight hours, but upon replacement

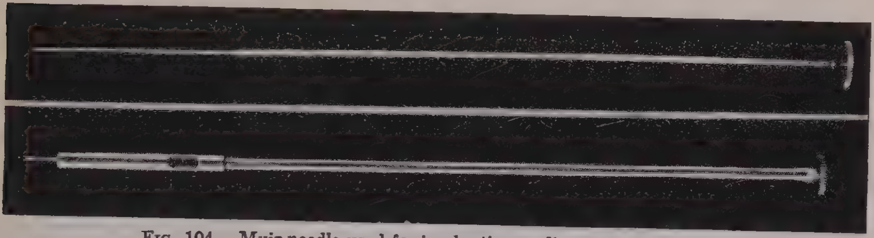


FIG. 104.—Muir needle used for implanting radium emanation seeds.

the cases progressed to eventual success. In no case was there rectal pain after implantation. Bleeding did not occur after the first day.

Of the untoward effects noted there were these: In one case, four days after implantation, the patient complained of a prickling sensation referred to the region of the sacrum; in two other cases the patients complained of slight sacral backache, which, however, passed off within another day. In none of these three cases were the effects noted sufficient to deter the patients from the performance of their daily duties. The nodules formed by the sclerosis of the hemorrhoid persist for six to eight weeks after the implantation, and are quite evident upon proctoscopic examination. They are, however, definitely fibrotic, and do not bleed nor give rise to pain or protrusion. Concerning the question whether the beneficent effects noted are permanent or whether recurrence is possible, I have, of course, but meagre data, as the longest case of my series is at this writing but ten and one-half months' duration.

The advantages of this method are plain: No anesthesia is required, not even local anesthesia, and no absorption of any kind whatever follows the implantation of radium seeds. Bleeding is stopped within a few hours, and in the course of two to three weeks complete fibrosis has occurred. There is no pain attendant upon this procedure, either at the time of implantation or subsequently. The successful treatment of hemorrhoids by this method requires only two things: 1, Proper selection of the cases, and 2, careful implantation of the radium seeds. For emphasis it is repeated that the cases selected were simple internal hemorrhoids, and the use of this method is recommended only in that type of case, pending further investigations. For complicated cases hemorrhoidectomy is suggested as a method of choice.

As must be evident, this method depends for its action upon the known physical property of the emanation from the element radium. Depending upon the strength and concentration of rays used, we have effects upon living tissue varying from mild irritation to actual cellular necrosis. Naturally, in an instance like this, we use that dose which gives us a mild irritant effect. As there is a natural decay in the strength of the radium emanation, we may be sure that the action will not be cumulative. We thus have an actual factor of safety which is not obtainable in any chemical method. Moreover, physical behavior of this substance has been worked out with mathematical accuracy so that we may be certain of exactly what is to be expected of a seed of known strength. The following table shows the rate of decay of radium emanation and the amount of energy emitted during the transformation of radium emanation.

Since the early cases of this series were treated, an advance has been made in radiotherapy employing the use of emanation seeds. This advance consists in the use of a platinum capsule in place of the glass capillary tube which has heretofore been used for the conveyance of radium emanation. The advantage of the platinum seeds over the glass seeds is that the metal platinum is impervious to the beta rays, and hence acts as a filter for these rays. As is well known, the beta rays are caustic in their action, and are capable of producing necrosis. This perfection in the method of using the emanation, therefore, makes it possible to use the seeds in greater concentration with practically no danger of inducing necrosis and sloughing. This is of particular advantage when the treatment of hemorrhoids by the implantation of radium emanation is contemplated. It is, therefore, suggested that if this method is tried the platinum seeds be used in preference to the glass seeds.

The observations mentioned heretofore in this chapter were based on clinical experience available up to the time

DECAY OF RADIUM EMANATION

Time		Per Cent. Remaining	Δ	Time		Per Cent. Remaining	Δ	Time		Per Cent. Remaining	Δ	Time		Per Cent. Remaining	Δ
Days	Hours			Days	Hours			Days	Hours			Days	Hours		
	0	00.000	0.375	1	15	74.639	0.557	5	4	39.455	0.292	13	0	9.633	0.0701
	0.5	99.625	0.372	1	16	74.082	0.554	5	8	38.289	0.283	13	8	9.072	0.0660
	1	99.253	0.742	1	17	73.528	0.549	5	12	37.158	0.274	13	16	8.543	0.0622
	2	98.511	0.736	1	18	72.979	0.545	5	16	36.059	0.266	14	0	8.046	0.0586
	3	97.775	0.730	1	19	72.434	0.542	5	20	34.994	0.258	14	8	7.577	0.0552
	4	97.045	0.726	1	20	71.892	0.537	6	0	33.960	0.251	14	16	7.136	0.0519
	5	96.319	0.719	1	21	71.355	0.533	6	4	32.956	0.243	15	0	6.721	0.0489
	6	95.600	0.715	1	22	70.822	0.529	6	8	31.982	0.236	15	8	6.329	0.0461
	7	94.885	0.709	1	23	70.293	0.525	6	12	31.037	0.229	15	16	5.961	0.0434
	8	94.176	0.703	2	0	69.768	0.522	6	16	30.119	0.223	16	0	5.613	0.0409
	9	93.473	0.699	2	1	69.246	0.517	6	20	29.229	0.216	16	8	5.287	0.0385
	10	92.774	0.693	2	2	68.729	0.514	7	0	28.365	0.210	16	16	4.979	0.0362
	11	92.081	0.688	2	3	68.215	0.509	7	4	27.527	0.203	17	0	4.689	0.0341
	12	91.393	0.683	2	4	67.706	0.504	7	8	26.714	0.197	17	8	4.416	0.0321
	13	90.710	0.678	2	6	66.698	0.496	7	12	25.924	0.191	17	16	4.159	0.0303
	14	90.032	0.672	2	8	65.705	0.489	7	16	25.158	0.186	18	0	3.916	0.0281
	15	89.360	0.668	2	10	64.726	0.482	7	20	24.414	0.180	18	12	3.579	0.0256
	16	88.692	0.663	2	12	63.763	0.475	8	0	23.693	0.175	19	0	3.271	0.0235

	17	88.029	0.657	2	14	62.813	0.468	8	4	22.993	0.170	19	12	2.990	0.0214
	18	87.372	0.653	2	16	61.878	0.461	8	8	22.313	0.165	20	0	2.732	0.0196
	19	86.719	0.648	2	18	60.957	0.454	8	12	21.654	0.160	20	12	2.497	0.0179
	20	86.071	0.643	2	20	60.050	0.447	8	16	21.014	0.155	21	0	2.282	0.0164
	21	85.428	0.639	2	22	59.156	0.440	8	20	20.393	0.151	21	12	2.086	0.0149
	22	84.789	0.633	3	0	58.275	0.432	9	0	19.790	0.146	22	0	1.906	0.0137
	23	84.156	0.629	3	3	56.978	0.422	9	4	19.205	0.142	22	12	1.742	0.0125
1	0	83.527	0.624	3	6	55.711	0.413	9	8	18.637	0.138	23	0	1.592	0.0114
1	1	82.903	0.620	3	9	54.471	0.404	9	12	18.087	0.133	23	12	1.455	0.0104
1	2	82.283	0.614	3	12	53.259	0.395	9	18	17.291	0.127	24	0	1.330	0.0095
1	3	81.669	0.611	3	15	52.074	0.386	10	0	16.530	0.121	24	12	1.216	0.0087
1	4	81.058	0.605	3	18	50.916	0.378	10	6	15.803	0.116	25	0	1.111	0.0080
1	5	80.453	0.601	3	21	49.783	0.369	10	12	15.107	0.111	25	12	1.015	0.0073
1	6	79.852	0.597	4	0	48.675	0.361	10	18	14.442	0.106	26	0	0.928	0.0064
1	7	79.255	0.592	4	3	47.592	0.353	11	0	13.807	0.101	27	0	0.775	0.0053
1	8	78.663	0.588	4	6	46.533	0.345	11	6	13.199	0.097	28	0	0.647	0.0044
1	9	78.075	0.583	4	9	45.498	0.337	11	12	12.619	0.093	29	0	0.541	0.0037
1	10	77.492	0.579	4	12	44.486	0.330	11	18	12.063	0.088	30	0	0.452	......
1	11	76.913	0.575	4	15	43.496	0.323	12	0	11.533	0.085	40	0	0.075	......
1	12	76.338	0.570	4	18	42.528	0.315	12	6	11.025	0.081	50	0	0.012	......
1	13	75.768	0.567	4	21	41.582	0.308	12	12	10.540	0.077	∞		0.000	
1	14	75.201	0.562	5	0	40.657	0.300	12	18	10.076	0.074				

Courtesy of Radium Emanation Co., New York, N. Y.

of publication of the first edition of this book. Since then I have acquired additional data and, as I promised in the former edition to make a further report upon the method, it is accordingly submitted herewith.

The first series, with the exception of two cases, have been continued under observation. Six of the series which had shown no response to the treatment first received were included in the second series to be mentioned presently. Four which had shown satisfactory response at first have since recurred—the recurrence varying from four months in one case to ten months in another. In two of the first series fibrotic nodules remaining after treatment were apparently the source of sufficient anal annoyance to justify their removal. Microscopic study of these showed a central foreign body, the glass seed wherein the emanation had been contained. The tissue surrounding this was fibrous in character. In neither instance were there evidences of neoplastic changes.

From these data it is evident that in about one third of the series, that is, in twelve out of the thirty-five cases in the original series failure—or at least unsatisfactory results must be admitted. However, an analysis of these failures seems to indicate that the fault consisted chiefly in the technique used rather than in the principle of the procedure. The lodging of a foreign body in tissues is known to be a reasonable cause for irritation. Hence the fact that in the first cases treated the capillary glass seeds left in situ gave rise to trouble later is not surprising. Nor is the fact that six of the early cases showed no response when we take into consideration the very small dose of emanation that was so cautiously given. The recurrence of four other cases can be explained similarly.

However, it must be borne in mind that the method had never been used before and caution in such a circumstance can hardly be considered illogical.

Improvements in the methods of handling the radium emanation as in the instance of the Muir technique have allowed an increasing boldness as to dosage. Four millecuries in *removable* platinum screened seeds may now be employed with no risk whatsoever. If correctly implanted in the hemorrhoid they can most assuredly be depended upon to stop bleeding and to cause a definite fibrosis and obliteration of the hemorrhoid. By the employment of this method I have successfully treated twenty-four cases of a new series which included five of the twelve failures previously reported.

Though the series is admittedly small yet I do not think myself over enthusiastic in claiming that there appears to be some merit in the method. Its complete lack of danger either by systemic absorption or by local action has much to commend it. The avoidance of operation will make it an increasingly welcome alternative for the patient who fears the knife. Had it not been for the fact that I feel constrained fully to explain the experimental nature of the method to my patients I am sure the series would be more impressive in numbers. As it is, however, I am sufficiently convinced to continue its judicious employment. Upon the basis of this I shall make further comments in current literature when my data are more extensive.

CHAPTER XVI

ELECTRICAL METHODS FOR THE TREATMENT OF HEMORRHOIDS

As in every other field of therapeutics, electricity in one form or other has been employed in the attempt to treat hemorrhoids. Thus, attempts have been made and systems of treatment founded upon the use of electrolysis, high frequency, endothermy, and the electrophysical method of X-ray therapy. (Figs. 105 and 106.) Of chief importance among these various methods are:

105 106

Figs. 105 and 106.—Types of apparatus used in the electric treatment of hemorrhoids.

1. Electrocoagulation.
2. Galvanopuncture or galvanocautery.
3. Desiccation or high frequency.
4. Ionization by simple galvanism.

Strangely enough, the advocates of these methods are each uniformly enthusiastic about their particular method, but although these methods have all been employed over a period of ten years, they have not grown in popularity as rapidly as their alleged virtues would seem to merit. This observation is not intended as a condemnation of electrical methods, but rather as a word of caution as to the acceptance of the views of an enthusiast along these lines. I have personally given all of the methods described herewith sufficient study and trial to acquaint myself with their virtues and their failings.

In a general way, my conclusions in respect to electrical methods have been the same in every instance. One of these conclusions at which I have arrived is that certain forms of hemorrhoids can be cured by electrical methods. I must confirm the observations, for instance, of the advocates of electrocoagulation in this respect. Coagulation or thermal necrosis of the tissues does occur, and the sloughing and cicatrization, which follow in the course of a few days, do result in a cure of hemorrhoids. The same may be said for treatment by galvanocautery and endothermy. I cannot, however, agree with the statements that advocates of these methods make in respect to the complete absence of pain, hemorrhage, or undesirable postoperative features. My own experience has been quite to the contrary. After the local anesthetic ceases to act, pain is considerable and, at times, enormous. Hemorrhage not only can, but does, occur occasionally during the sloughing process which follows this treatment. Scar formation is frequently extensive, and I have seen cases of anal stenosis as a sequel to electrocoagulation. None of these methods can be administered without a preliminary injection of local anesthesia, and this fact has made it questionable in my mind as to whether we should select a painful, uncertain, and sometimes hazardous procedure, such as electrocoagulation, in preference to an operation, such as the ligature operation, in which hemorrhage can be absolutely obviated, pain be reduced to a minimum, and the entire operation performed in at least the same time as it takes to treat by electrocoagulation.

There is one fact which I am quite certain the advocates of these methods consistently overlook, and that is that when they inject a local anesthetic into the hemorrhoidal tissues, they are introducing an irritant substance. Not infrequently, the substance used is quinine and urea-hydrochloride. As is well known, the latter substance is also used with good results in the injection treatment of hemorrhoids. So that the question arises: Perhaps some of the beneficent effects are due to the irritation induced by these anesthetic fluids injected into the hemorrhoid. Then, too, one recalls to mind some of the ancient methods of "curing" hemorrhoids by the simple procedure of inserting a needle into the hemorrhoid, and thoroughly tearing up the vein wall. So that with all facts considered, an impartial observer, as I believe I am, comes to the conclusion that, although the cure of hemorrhoids may, under fortunate circumstances, be accomplished by electrotherapeutic means, nevertheless, the observations at hand tend to classify it as a circuitous method of approach.

One final preliminary word in respect to electrical method of treatment may be added. Electrical methods require for their administration certain machines and apparatus which are, of course, articles of commerce. And in these days of high-powered salesmanship, the gullible and too trusting practitioner of medicine may be unduly impressed with a clever line of sales talk, which in no way establishes the scientific merit of the method in question. Inasmuch, however, as this method of treatment is the only one employing a definite article for sale, it has for this reason become enveloped in commercial atmosphere, more than any of the others. Not that this in any way detracts from whatever value these machines may have; it does, however, call for shrewd discernment on the part of the physician between the pseudoscientific and the truly scientific.

Since our purpose here is to present modern views on the treatment of hemorrhoids, it appears consistent with that purpose to mention the various electrical methods which are sincerely advocated and honestly preferred by many medical practitioners even though our personal experience and preference may be at variance with this. As a matter of fact, the physician's personal preferences must be modified to a reasonable degree by those of his patient. Thus, while the surgical method from theoretical considerations may be preferable to the physician, yet from the patient's standpoint a non-surgical method is often more acceptable. The reasons for this are partially sentimental and partially economic. Many patients (and I can recall more than a few doctor patients) dislike the thought of being operated upon; others shrink in anticipation of the pain; still others feel that a method which will permit them to "keep going" while being treated is much to be preferred to a method that requires a short hospital stay. I would probably not be so broadminded on this point if it were not for the fact that, as stated previously, I have had doctors come to me and ask if I wouldn't use electrocoagulation rather than a surgical method. If this be a professional man's attitude, it seems reasonable to find a similar view among the laity, and perhaps this is why numerous physicians advocate electrical methods in preference to surgical methods. And after all, we who practice medicine are not prohibited from practicing the Golden Rule, "Do ye unto others as ye would have done unto yourselves."

Proceeding now to a description of the various electrotherapeutic measures which are in current use, we find that the principal methods are:

1. Electrocoagulation.
2. Galvanopuncture.
3. Electrodesiccation.
4. Ionization.

Electrocoagulation Method of Treating Hemorrhoids

One of the best-known methods for the electrical treatment of hemorrhoids is by the process of electrocoagulation. This method, although it has been used, so far as the literature indicates, for over fifteen years, has not attained popularity, and indeed is looked upon in some quarters as a quack method. I do not hesitate to state that there is nothing illegitimate nor dishonest about the method. While, from the standpoint of therapeutic efficiency, the method leaves much to be desired, yet I see no reason for condemning it upon ethical grounds. The fact that unethical practitioners were the first to use it to any great extent does not, in my opinion, lessen its intrinsic value. Electrocoagulation is a physical process which has found application in other fields, and curiously enough, in these fields it is not considered a quack method. In its application to the treatment of hemorrhoids, it has been used, and is being used, by many men who are skilful and sincere practitioners of surgery.

As to its therapeutic efficiency, I am not altogether convinced, for the results in my own cases were not as agreeable to the patient nor satisfactory to myself as has been treatment by other methods described in this book. The fact, however, that a large medical institute in the middle west sees and successfully treats large numbers of these cases makes me hesitate in declaring it useless, for the test of commercial value is very stern and merits consideration.

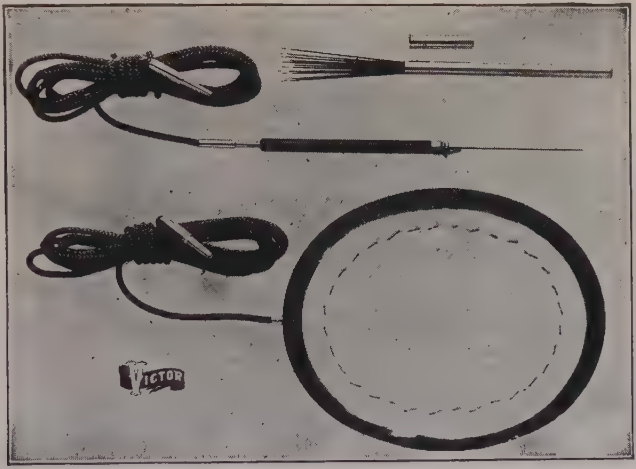


Fig. 107.—Electrode used in the electrocoagulation treatment of hemorrhoids.

Electrocoagulation and Surgical Diathermy

Electrocoagulation is a method which causes the coagulation of tissues by the Oudin current or one pole of the d'Arsonval current.

Surgical diathermy is the process of applying high frequency currents for the destruction of tissues. It does this by the heat produced through the resistance offered by the tissue through which the current is forced, without sparking. The treatment differs from the application of the electrocautery or other applications of heat in that the heat with the latter methods is applied from without, and does not have much penetrative power. In diathermy the heat is generated in the tissues themselves, and the temperature of the diseased area may be readily raised to a point of coagulation. Therefore, it is the penetrating power of this heat which makes it more efficient than the thermic cautery, since the latter destroys only by transmitted heat.

Surgical diathermy is produced by the bipolar method of d'Arsonval current, and should be of low voltage, high amperage, and extremely high frequency. The indifferent electrode is a piece of block tin about eight inches in diameter, and is strapped to the patient's back or shoulders. This electrode may be wet with a soap lather or used dry. The main object is good contact, and strapping with a good canvas binder is all that is needed. The active electrode is smaller, and either made up of a point or some other suitable electrode as to the shape and size needed. (Fig. 107.)

In surgical diathermy or electrocoagulation it is necessary to use an anesthetic of some kind; a local anesthetic such as novocain or some similar preparation is used. Ether is not satisfactory on account of the danger of explosion.

In an article by Cubas and Alamilla of Havana, the satisfactory use of this method in thirty-two cases was described. Their exact technique used was briefly as follows: "After placing the patient in the left lateral position, ethyl chloride anesthesia was induced. An indifferent electrode of large surface is applied over a damp compress on the back of the leg. Then, using a 100 to 200 ma. current and a gold knife electrode of medium size, the most prominent hemorrhoids were gently touched, and coagulation thus produced. In this procedure, the authors advise the avoidance of strong pressure. They also advise a very gradual increase in the intensity of the current, so that sparks or flames may be avoided. Sparks rupture the hemorrhoidal wall and cause bleeding, which, of course, interferes with the procedure. When properly performed, coagulation of the hemorrhoidal tissue is said to be instantaneous, and the whole procedure only requires a few minutes. Sloughing occurs within five or six days, and defecation is not permissible until then." For this method of treatment these authors claim the following advantages over other treatments. (1) No cicatricial contraction. (2) No hemorrhage during or after operation. (3) Seldom pain (five of thirty-two cases relieved by stovain-adrenalin, no morphine). (4) Ethyl chloride anesthesia. (5) No retention of urine and no incontinence of feces. (6) Applicable even in cachectic cases. (7) Constipation greatly improved.

More recently, Waring, of Blanchester, Ohio, describes the following technique, for which he makes the claim that hemorrhoids may be relieved without pain or bleeding and without cutting or loss of time from work. The technique which he uses and recommends is as follows:

" Operation is performed under local anesthesia. A half-hour before operation morphine sulphate, grain 1–4; atropine sulphate, grain 1–100, and strychnine sulphate, grain 1–30, may be given hypodermatically with advantage. Magnesium sulphate in 2 cc. doses of a 50 per cent. solution may be used with advantage as the menstruum for this preliminary medication, after the usage developed by Gwathmey. When given with morphine the magnesium sulphate exerts a synergistic effect, and the analgesic effect of the morphine is considerably prolonged. If the effects of this combined injection begin to wear off after operation, and the patient should complain of much discomfort, another 2 cc. of this magnesium sulphate solution may be injected alone. Other operators resort to a hyoscine morphine injection, and still others do not use any preliminary medication at all; I believe the preliminary injection as above outlined should be used in all local anesthesia cases; although the dosage may be modified, of course, with the age, size, and general condition of the given patient.

"Bowels should have been emptied prior to operation, a simple enema being found very satisfactory for this purpose. Cleansure of operative field with mild soap and water, followed by lavage with a potassium permanganate (solution 1–3000), largely eliminates unpleasant odor about the anal region; and is at least more satisfactory to the operator from an olfactory standpoint.

"The perianal field may now be anesthetized with 2 per cent. novocain, or the operator may prefer novocain, 2 per cent.; adrenalin (1–1000), 1 per cent.; and antipyrin, 1 per cent. From 1 ½ to 4 ounces of this solution is used, injection being made with a long, slender standard hypodermic needle from 2 to 2 ½ inches in length. Local anesthesia being secured, our hemorrhoids may be treated through a speculum if internal, but the writer has found it far more practical to apply a suction cup of sufficient size to the anus, and thus bring down any internal hemorrhoids, which for the time being are converted into interno-external hemorrhoids. This gives the operator a better opportunity to estimate the exact condition of the given case; and also allows easier attack on the individual hemorrhoids.

"Having thus surveyed and studied the field of operation, a pile mass is seized with forceps and held out prominently.

"We may use an indifferent electrode, usually about a 5 or 6 inch plate of diathermy metal, strapped over one leg of patient; or preferably may use our regular autocondensation handle as the indifferent electrode, allowing patient to grasp same firmly; this has one advantage in that it gives our patient something to do himself, and to that extent diverts his mind from the field of operation. An electrocoagulation needle in an insulated handle is not brought into play, being connected up to the machine proper by a good flexible conducting cord of sufficient length to make easy handling. (Fig. 107.) A good foot-switch is a necessity, so that the operator has absolute control of his current at all times.

"From 300 to 600 milliamperes of d'Arsonval current is usually sufficient for our work; our object is to coagulate, not to carbonize nor burn, hemorrhoidal tissue in the operation. Using our foot-switch for control of current, the needle is carried through base of the hemorrhoid to be coagulated, and just sufficient current sent through to whiten or coagulate the tissues; the current should be off as the needle is introduced and withdrawn from the hemorrhoidal tissue; as otherwise some sparking and carbonization would result, with possibly pain after operation. Our needle is introduced through successive portions of the hemorrhoidal base until we have overlapping coagulated areas across bases of the hemorrhoid; in other words, we have coagulated, and thus strangulated, the base of each hemorrhoid far more effectively than the stoutest ligature could do, and this without any pain, bleeding, or raw surfaces left.

"Each hemorrhoidal mass to be removed is attacked in the same way, thus completing the operation. Large pile masses will slough away in a few days; smaller ones shrinking and slowly disappearing in due course. Some operators attack only one pile at a time, having the patient perhaps return for several treatments; but in the opinion of the writer this is a refinement, which only adds to the discomfort and expense of the patient, without any material advantage gained therefrom. Properly done, the operation is painless; and our patient is free to go about his usual avocation. The first bowel operation after treatment, the usual *bête noire* of the surgical hemorrhoid patient, amounts to nothing with our electrocoagulation patient. After operation the patient is given a plentiful supply of a quinine and urea-hydrochloride containing pile ointment, which is sufficient to control any local irritation or possible discomfort after operation; while petrolagar or similar preparation in full dosage for a few days keeps the bowel passages in an easy condition, and thus conduces to a rapid return to normal conditions.

"Unless an undue amount of current has been used, with more or less sparking and carbonization of the tissues, our patient does not complain of pain after operation; most of them will tell you of a slight sensation of warmth or heat about the anal region which gradually passes off in about a half-hour or so; but in general, this is their only complaint. With a nervous or neurotic patient, or if there should be pain complaint after operation, this is relieved with a second injection of the magnesium sulphate solution, but this will rarely be called for."

The foregoing is a representative presentation of the electrocoagulation method of treating hemorrhoids by surgical diathermy. It is the statement of an enthusiast of the method, and as such is deficient in one respect. The disadvantages or untoward features of the method are scarcely mentioned. The method is by no means as ideal as the above description would lead one to imagine, and I believe that it is entitled to a more comprehensive and judicious discussion. Moreover, the practitioner is entitled to know its defects as well as its virtues.

In the first place it will be apparent that the treatment is by no means a simple procedure. The amount of preparation advised, the employment of an anesthetic, and of incidental analgesics, are quite the equal if not actually in excess of those commonly used in an ordinary hemorrhoidectomy. In addition, it must be remembered that in order to administer this treatment, special electrical apparatus must be available. This implies the investment of several hundred dollars and limits, except in the instance of portable equipment, the treatment to the exact place where the machine is available. Moreover, in localities where electricity is not available, the method cannot be used. Or, in instances where a particular variety of current is necessary, accessory devices for rectifying the current are needed. In fairness, it must be admitted that these machines usually have a wider range of utility than just for hemorrhoid treatments.

The immediate after-effects are not fairly stated in the exposition of the method quoted. When the local anesthetic wears off, there *is* pain, burning, and soreness. These at times are enormous, especially when one is quite so foolish as to treat external hemorrhoids by this method. Bleeding does not occur immediately, but when in the course of a few days the slough separates, bleeding may be quite severe. This is particularly prone to occur following a bowel movement. The claim is made that one advantage of the method is that no cutting is required. This is true, but I believe the modern medical practitioner will agree that cutting is infinitely preferable to a method that involves the production of a slough. For one thing, the method is surgically inexact. For another, it is not consistent with the principles of modern surgery to allow necrosis and sloughing to occur. The dangers of toxic absorption and infection are too well recognized to require further elaboration here.

The results of electrocoagulation treatment of hemorrhoids are by no means uniformly favorable. If the method is properly performed, and thoroughly done in a suitable case, *i.e.*, a case of simple uncomplicated internal hemorrhoids, and if we are fortunate enough to escape infection, then a cure will result. Along with the eradication of the hemorrhoids, however, we generally have, after the slough has separated, and the wound healed, a large amount of scar tissue. This requires considerable attention in the form of dilatation to prevent stenosis. If the amount of scar tissue is great, stenosis or even stricture will result despite our efforts to prevent it.

This method is usually classed as an ambulant method, and it is said to involve no loss of time from business. While it is certainly true that the treatment may be done in an office, and that the patient may immediately return home, it is equally true that said patient does not usually report on time for the next day's work. No extensive confinement is required, but in the interests of safety at least a week should be allowed before suggesting a return to business.

Galvanopuncture Method of Treating Hemorrhoids

In his book on " Ionic Medication," Lewis Jones speaks of this method in the following manner:

" Piles may also be treated by ionization, using a zinc needle. (Fig. 108.) Bokenham has recorded twenty cases treated in this manner with currents ranging between 10 and 25 milliamperes, and for ten minutes or longer, until the pile appears to have undergone coagulation. Several zinc needles are inserted in different parts of the tumor, and he considers that they should be amalgamated, but not so much as to render the points brittle. If the pile is as large as a ' pigeon's egg,' it is done in two instalments, and if larger, in three, with intervals of ten days between. By the use of an injection of adrenalin and cocain pain and bleeding are reduced. A general anesthetic is not required."

In his recent book, " Practical Electrotherapeutics and Diathermy," G. Benton Massey says: "The purpose of definite electrosurgical treatment of individual piles is the coagulation of the blood in the pile in such a way that the clot will become organized into solid tissue, collateral veins taking care of the circulation previously conveyed by the enlarged vein.

"The methods employed are: (1) Zinc puncture and ionization. (2) Anodic submucous electrolysis by puncture with an insulated iridoplatinum needle. (3) High-frequency cauterization. All the methods are unipolar.

"ZINC PUNCTURE AND IONIZATION is invariably effective, but has the disadvantage that the zinc needle is not readily made so fine as to carry insulation beneath the mucous surface, and thus confine the ionization to the interior of the hemorrhoid, the ionization of the mucous surface resulting in a small surface ulceration whether the hemorrhoid be internal or external. The zinc ion is theoretically contraindicated also as it is not a particularly absorbable ion, and is usually extruded in a slough or serous discharge. Nevertheless, a number of cases have been successfully treated with but slight discomfort to the patient.

"Puncture with a sharp needle made of platinum iridium, the needle having been insulated with fused hard rubber, has the advantage of producing a clot that has no foreign ions, consisting only of fibrin, hemoglobin, etc., clotted by the released ions of phosphoric acid, etc., of the tissues. More current will be needed than when the zinc ions are used.

"With the exception that less milliamperage is used with the zinc anode, the following technique will apply to both of these methods:

"An external hemorrhoid may be treated with the patient in either the dorsal or Sims' position as most convenient, the dispersing cathode pad being either beneath the back or resting on the hip. If the external hemorrhoid be covered by dry skin, endodermal anesthesia with cocaine or a synthetic substitute should be used. If covered by moist mucous membrane the mere application of the powdered anesthetic will suffice if ten minutes be allowed to elapse before puncture.

"Active Electrode.—If zinc ions be employed, the electrode for external puncture is a fine needle of this metal about five centimetres long, insulated at its puncture and except two millimetres from its point with fused sealing-wax. For an internal hemorrhoid the needle must be long enough to reach the hemorrhoid through the speculum, and insulated as described.

"An active electrode of iridoplatinum may be made from three centimetres of No. 26 iridoplatinum wire soldered to a long piece of silver or copper wire, the platinum tip being filed sharp and copper end turned into a loop for attaching the light wire conductor. This needle is best insulated more permanently by fusing hard rubber on it except the two millimetres of tip. In fact, a rather long epilation needle may be used for this purpose.

"Either of these active electrode needles should, of course, be connected with the anode of the generator of direct current. For this treatment one needs the author's hard rubber proctoscope.

"When shortened by the removal of the solid end, the blades of this proctoscope are capable of being bent slightly to a less calibre while immersed in hot water, the new curve being then fixed by immersion in cold water. A smaller glass tube may then be used as obturator.

"This instrument is a little more clumsy to insert into the anus than the Kelly instrument, but the material of which it is made makes it ideal for any kind of electric treatment, including the Oudin; the spaces between the blades permit of a better view of the anal edges and the nearest portion of the rectum than full cylinders, and facilitate the ready treatment of morbid conditions showing between the blades without spreading of the current, as would be the case with a metal instrument.

"The powdered anesthetic is now placed on the spot selected for treatment, and allowed to remain several minutes, when the active needle is inserted into the pile until its insulation disappears within it. A current sufficient to turn the pile of a lighter color is then gradually turned on, and turned off equally gradually as soon as the change of color occurs. The power employed varies from 5 to 15 milliamperes for five to ten minutes. On subsequent days other hemorrhoids may be similarly treated, but a single application is all that is usually required for each; some tenderness will be felt for several weeks."

H. W. Sigmund, of Crawfordsville, Indiana, writes, under the title of "Positive Galvanism for the Treatment of Hemorrhoids," as follows:

"After thorough cleansing of the parts by the usual methods, anesthesia is produced. Before using galvanism, allow at least five to ten minutes to pass to insure a complete anesthetic effect. The sphincter will then be found sufficiently relaxed and dilated for any ordinary rectal treatment. When the sphincter is dilated, the hemorrhoid is injected from its base to its apex with ½ per cent. solution of quinine and urea-hydrochloride. The particular point to remember is that distention must be carried on until the tissues are blanched. The negative pole is attached to a large moist pad and either strapped to the abdomen or placed under the patient so as to make good contact. Attach the positive pole to the needle. (Fig. 108.) A needle-holder is furnished for this connection. Insert the needle into the apex of the pile. Begin by gradually turning on the current until ten to fifteen milliamperes are reached. Give this for about ten or fifteen minutes, or until the pile is about the color of a Malaga grape (an ashen-gray color).

" It is cautioned that the needle be inserted as near the top of the pile as is possible. If the base is approached, after-pain is experienced. Treat only one pile at each visit. This minimizes the strain on the patient, and permits the work to be accomplished without loss of time or unnecessary discomfort to the individual."

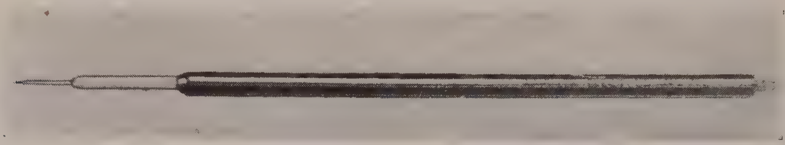


FIG. 108.—Needle used in galvanopuncture method.

Concerning this method, Neiswanger in his " Electrotherapeutical Practice " writes as follows:

"A former process, and one that had many advocates, was galvanopuncture. A needle attached to the negative pole was introduced into the tumor, and sufficient current employed to produce decomposition of the blood, such products of decomposition being taken up by the absorbents, or a platinum needle from the positive pole was plunged into the tumor, with the result that a firm clot was formed, which it was also expected the absorbents would take care of.

" It must be remembered, however, that the patient is in great danger whenever products of decomposition are set free in the rectal circulation, first from hepatic embolism, by entrance of these products into the superior hemorrhoidal vein, thence to the inferior mesenteric, and through the portal vein to the liver; second, a cardiac embolism, from the middle or inferior hemorrhoidal to the internal iliac, to the common iliac, and through the inferior vena cava to the heart. Moreover, all such operations are productive of so much pain as to bring them beyond the limits of tolerance of most patients."

Apparently, Neiswanger, who is an electrotherapist, has no high regard for the galvanocautery method. My own opinion on this method is precisely the same as it is in regard to electrocoagulation, *i.e.,* it is a cumbersome and dangerous manner of attempting to eradicate hemorrhoids.

DESICCATION OR HIGH-FREQUENCY METHODS OF TREATING HEMORRHOIDS

This method is described by W. L. Clark, of Philadelphia, in an article in *American Journal of Electrotherapeutics and Radiology,* September, 1925. "It has been employed by that writer for sixteen years and has been found to be thoroughly efficient, yet it may be employed under local anesthesia with little postoperative discomfort, danger of stenosis, embolism, or hemorrhage.

"The term 'desiccation' is descriptive of the effect produced upon the tissues by heat generated by means of the high-frequency electric current, which is regulated so that the intensity is less than that of the actual cautery. The method of heat production differs from that of the actual cautery, inasmuch as the heat is generated in the tissues by the resistance offered to the current, and has greater penetrating properties than the cautery as ordinarily used. The heat from the actual cautery is transmitted by contact with the tissues, and is comparatively superficial in action. The desiccation method is one by means of which any accessible neoplastic tissue may be devitalized by heat of just sufficient intensity to desiccate the tissues. Any standard high-frequency machine generating the proper quality of current can be used for this purpose and the technique easily learned with a little practice. A monopolar current of the

Oudin type is preferred. This is applied to the lesion by means of a needle held in a suitable insulated handle, and connected by means of an insulated wire to the high-frequency apparatus. (Fig. 109.) The current strength to destroy growths of different size must be estimated to suit the requirements of the individual case. When the hemorrhoids are small the current is delivered through a short air space between the needle and the hemorrhoid; when of medium size the needle is brought in contact; and when large the needle is inserted into the hemorrhoid. No infallible rule can be given for the application of the desiccation method, for good technique must be acquired by practice.

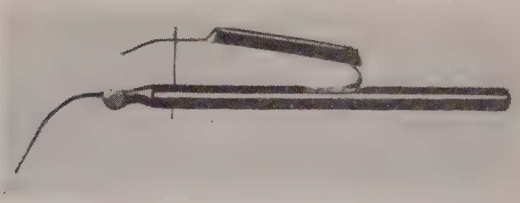


FIG. 109.—Needle used in desiccation method of treating hemorrhoids.

"The technique of infiltrating the sphincter muscle with a 2 per cent. solution of novocain and adrenalin is simple, and consists of plunging the hypodermic needle at right angles and injecting two or three cubic centimetres of the anesthetic deeply into the muscle, about one inch from the anus. About five equidistant injections around the anus are sufficient to block the sensory nerves, and render complete stretching of the sphincter possible. Care should be taken not to inject the novocain subcutaneously, else the patient may suffer unnecessary after-discomfort owing to resulting edema of the parts.

"The slight postoperative discomfort is explained by the fact that the trauma to the tissues is slight as compared with the cautery, excision, and ligature operations. Danger of stenosis is avoided, because a contracted cicatrix does not result after the proper application of the desiccation method, since from a histological standpoint contracted scar tissue is in proportion to the amount of trauma and secondary inflammation produced by the desiccation current is comparatively slight.

"Embolism is avoided because the dilated hemorrhoidal veins are completely destroyed, and no chance is given for clotting. Secondary hemorrhage is avoided for the reason that the desiccating current penetrates for a short distance below the blades of the clamp, firmly sealing the vessels. This is not the case with the ordinary cautery, which seals the tissues superficially.

"External Hemorrhoids.—The desiccation treatment of external hemorrhoids and hypertrophic tabs of tissue around the anus is simple and satisfactory. After local anesthetization a line is desiccated across the hemorrhoid, instead of a primary incision with a scalpel. The needle is then inserted into the clot, which is desiccated, and the vein destroyed. The hemorrhoid is then incised through the desiccated line without hemorrhage, and the desiccated clot curetted out. Relief is immediate and healing is rapid. Loose hypertrophic tabs around the anus are desiccated and allowed to slough, or they may be excised after the desiccation without hemorrhage.

"Internal Hemorrhoids.—The desiccation method for the radical treatment of internal hemorrhoids, no matter how extensive they may be, whether with sessile or pedunculated bases, has been found to be most satisfactory. The usual preoperative preparation of the patient is carried out. Local anesthetization is usually employed by one of the methods indicated, though in some supersensitive individuals a general anesthetic may be used. After stretching the sphincter, each hemorrhoid is pulled down in turn by means of tenacula, and the pile clamped at its base in the direction of the muscle fibres, which are at right angles with the anus. Recent experience has shown that internal hemorrhoids may be held loosely by the clamp without actually crushing them. The hemorrhoids may then be desiccated. This method appears to have some advantage. The postoperative discomfort is so slight that frequently patients proceed with their duties of life immediately after the operation, but this is not usually advised if the case is a bad one, as it is best for such patients to remain in bed for a few days. The bowels should be opened the second day with a saline, and mineral oil used for about ten days thereafter.

"So many excellent results have been observed that the desiccation method is recommended as a simple yet most efficient method for the medical treatment of hemorrhoids."

The application of the desiccation or high-frequency method to any form of external hemorrhoids as recommended in the foregoing will, I assure you, cause no end of trouble to the patient and considerable annoyance to the physician. Though no serious consequences will ensue, it is productive of considerable after-pain and soreness. This is usually serious enough to a patient who has been promised "no pain." In the instance of thrombotic external hemorrhoids, a simple slit with a knife and evacuation of the clot can be done in ten seconds. What necessity is there for an elaborate and expensive machine to accomplish so simple a task? I believe that the desiccation method should be confined to internal hemorrhoids in its application, if there is any necessity for using it. Frankly, I cannot approve of any method which brings about a slough with its immediate dangers of hemorrhage and infection, and the later danger of stricture. This appears likewise to be the conclusion of G. Benton Massey, who, in his recent text-book on "Practical Electrotherapeutics and Diathermy," states that high-frequency cauterization is an inferior method, since it produces a slough.

SIMPLE GALVANISM OR IONIZATION

The demonstrable effects of the positive pole of a simple galvanic current are these: The positive pole is sedative, since it diminishes the irritability of tissues; anticongestive, for it drives liquids and solids towards the negative pole. It is an acid caustic, producing mummifying effects; the eschar is hard, dry, and non-retractile, through the oxygen and chlorine that it liberates, and is antiseptic.

Neiswanger makes the following additional remarks and outlines a treatment based upon the use of the positive pole:

"The positive pole, by its acidity, coagulates the albuminoids of the blood and hardens tissue. Being a powerful vasoconstrictor, it lessens the lumen of the blood-vessels, thereby overcoming the existing turgescence. The positive pole allays the inflammation and stops the pain.

"It, therefore, becomes evident that we have in this pole a remedy to meet all the symptoms, and all that is required is a suitable electrode for its application. This, as shown in Figure 110, is composed of a copper bulb, mounted upon a short insulated staff with a receptacle for the cord tip in the proximal end. When this is inserted, the sphincter grasps it near the end on the insulated surface, and it requires no further attention from the operator.

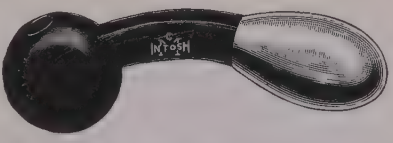


FIG. 110.—Electrode used in ionization treatment of hemorrhoid.

"When we realize the great importance of the rectum as a reflex centre, we become aware of the caution necessary in making even a simple application of galvanism. In the first place, we cannot afford to attach a bare metal electrode to the positive terminal and apply to the mucous surface of the rectum, because, by sticking, it might make a worse condition than the one already existing. The electrode must be covered closely, as the cover on a ball, with part of an old kid glove, being sure that the seam is drawn closely so as not to expose any of the metal.

"The author (Neiswanger) was at first accustomed to wet the covering with water only, but in many cases, where the tenderness was excessive, found it impossible to introduce the electrode without lubricant of some kind. Vaseline, being a non-conductor, is not suitable, and soap, by its alkalinity, neutralizes, in part, the effects of the positive pole. A formula for making an excellent lubricant for either hands or electrodes will be found in my book. Formerly, it was thought that a new covering was required for each patient, and although it may seem at first thought uncleanly, we now use the same covering for any number of patients, because it has been found that as soon as the covering has become saturated with the salt of copper, it is as aseptic as if it had been boiled in bichloride. The best method is to thoroughly wash the electrode with soap and water after using, and then immerse the covered end in a saturated solution of boric acid, leaving it there until it is wanted for use. In this way we prevent the covering from becoming dry, contracting, and probably opening up the seam, and it is always ready for instant use.

"The technique in detail is as follows:

"Place the patient upon the table in Sims' position, wet thoroughly a pad as large as the hand, or larger, attach it to the negative terminal of the battery, and place upon the abdomen. The positive is connected with the rectal electrode, which is then carefully introduced with the curved side down, pushing up with the electrode any fringe or prolapsed membrane. The current is now turned on by means of the rheostat until twenty milliamperes is reached, and allowed to flow for ten minutes. In most cases the treatment may be repeated every second day. The process here given is not intended to apply to old, hard external hemorrhoids."

Massey, in his book,* states, "A mild degree of varicosity of the hemorrhoidal veins can be relieved by the application of what we now know as rhythmic currents with a metal olive in the rectum and a dispersing pad on the abdomen."

Of all the various electrotherapeutic methods, ionization by simple galvanism is the most acceptable. It does afford relief. I have never seen a case of hemorrhoids cured by it. It is eminently adapted for active palliative treatment, and I use and advocate its use where other treatment is refused in cases of simple internal hemorrhoids uncomplicated by the presence of other anal or rectal pathology. It is apparently mildly sedative in its action. It involves no confinement to bed, and is ideally adapted for office treatment. It is of no value whatever in the treatment of external thrombotic hemorrhoids. It does not cure any form of hemorrhoids, but on the other hand has no undesirable features such as sloughing or tendency to stricture formation.

Conclusions

Electrotherapeutic methods of treating hemorrhoids are, despite their commercial exploitation, legitimate methods. They are not particularly convenient nor efficient measures. Many of them have distinct, though usually unmentioned disadvantages. These disadvantages are the cost of the equipment, the pain and soreness following treatment, and the dangers incident to sloughing. Of all the various electrical methods, that of positive galvanism with a simple rectal electrode is the least distressing as well as the most efficient from a palliative standpoint, and the least efficient from a curative standpoint. Finally, all electrotherapeutic methods of treating hemorrhoids are cumbersome and inefficient therapeutic procedures. They are circuitous methods of accomplishing a simple object. Their employment is justifiable if available when a patient who has simple uncomplicated internal hemorrhoids will not agree to treatment by operative or injection methods. The use of electrical methods in cases of external hemorrhoids is contraindicated.

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* Practical Electrotherapeutics and Diathermy—C. Benton Massey, Macmillan, 1924.

In an admirable article in the *Medical Council* entitled "True and False Teaching in Applied Electricity," Clark gives expression to sentiments which aptly summarize the value and limitations of electrotherapy. What he says regarding the subject in general applies in particular to the matter of electric means of treating hemorrhoids.

"Electrotherapeutics is not a system to be used to the exclusion of other therapeutic measures, but is a worthy additional unit to any physician's armamentarium. Competence in this as well as in other methods of physical therapy will do much to discourage irregular practitioners who are thriving on charlatanism.

"Electrotherapeutics should be studied from the standpoint of cause and effect rather than by outline of indications. Success depends upon an adequate knowledge of physiology and pathology as related to the human body; upon a mastery of the laws that govern electricity; upon the possession of efficient apparatus, the achievement of good technique by practice, and the good judgment to apply all these acquirements to the best advantage."

CHAPTER XVII

COMPLICATIONS AND SEQUELÆ INCIDENT TO HEMORRHOIDS

COMPLICATIONS and sequelæ arising from or in connection with hemorrhoids are either the result of commission or of omission. They are either the result of committing errors in judgment as to what treatment is appropriate in a given case, or else they follow error in the technique of carrying out a line of treatment which in itself is appropriate. On the other hand, the error of omission by sheer neglect of the condition often in itself gives rise to unpleasant circumstances.

Indeed, by far the greater amount of complications result from the neglect of hemorrhoids rather than as the result of attempts at their treatment. When we consider the nature of the condition; that is, a part richly supplied with blood and a system of nerve fibres which reflexly exert their effect both through the sympathetic system and the cerebrospinal system, one can readily conceive of the possible ill effects of disease affecting the anorectal tissues. Moreover, by their proximity to other pelvic organs, direct effect upon these is possible. Remote effects are possible through the absorption of infective material into the portal system and the deposition of this infective material in the liver and possibly elsewhere. The constitutional effects are produced both by means of nervous and vascular influences.

Thus, we see, briefly, that the complications which may arise in the event of hemorrhoids being neglected may be broadly classified as being local or remote. The remote complications may be either the result of reflex action, or due to changes in the body (constitutional), or they may be induced through the agency of misreference of sensation.

The local complications are chiefly the result of traumatism and of infection. Thus the traumatism which brings about prolapse of the hemorrhoids may cause a progression to a prolapse of the anal mucosa. One step further in this process is a complete prolapse of the rectum. When infection occurs, ulcers of varying size result, and varying with their location, the amount of pain and discomfort also varies. Such an ulcerative process long continued may lead to ulcerative proctitis or may induce anal pruritus. Finally, long-neglected and chronically inflamed hemorrhoids may become gangrenous or actually be the site of adenocarcinomatous changes, as shown in Figure 112. There are a definite percentage of cases which are transformed from a benign condition, such as simple hemorrhoids, to a malignant condition, such as cancer is. Likewise, epithelioma of the anus may result from chronically ulcerated external hemorrhoids. An example of this is furnished by a case such as is shown in Figure 111. Hertzler and others have reported cases of this nature.

Through the agency of a reflex irritation in the form of inflamed hemorrhoids, spasmodic stricture of the urethra may be induced, thus causing a suppression of urine, or through the same agency the excitability of the trigone may be increased and give rise to increased frequency of urination. Similarly, the function of the ovaries and womb may be unfavorably affected, leading to menstrual disorders. There is one class of reflex effects which has been but little noticed by the average general surgeon, and indeed by the rectal specialist. These constitute a group of symptoms of gastric irritability which often are diagnosed and treated as " chronic indigestion." That the presence of inflammation is more than a coincidence may be inferred by the disappearance of the " indigestion " following adequate treatment of the inflamed hemorrhoids—and this despite the fact that medicines administered by mouth for the relief of the indigestion were all but of temporary value. Indeed, the author has seen cases of suspected gastric ulcer with a constant hyperacidity, but with negative X-rays, which were completely cured of their " gastric ulcer " by successful treatment of their hemorrhoids. This observation has been similarly made by Palier and others.

The constitutional ill effects of neglected hemorrhoids are occasionally well recognized, but frequently entirely overlooked. Foremost among these constitutional symptoms is that of anemia, which is often severe in type and not infrequently diagnosed as primary pernicious anemia in lieu of a definite reason for the anemia. Needless to say that a complete history and assuredly a rectal examination would not only avoid such an error, but would go a long way toward opening the door toward appropriate treatment and complete recovery. In other cases, where the anemia has not progressed to so great an extent, there is nevertheless a profound secondary anemia, innumerable instances of which are reported in the literature. In these cases we have all the symptoms of an anemia; namely, vertigo, breathlessness, weakness, and anorexia. Hemorrhoids are never given as a cause of death, yet I am certain the severe anemia, and in some cases almost complete exsanguination, which results from the continued and neglected bleeding is in fact a cause of death in more cases than is supposed.

Perhaps the second most important constitutional effect is the profound depression exerted upon the nervous system. Perhaps through the agency of the anemia, but certainly not entirely from this cause alone, many of these patients are mentally depressed, physically sluggish, and in general devoid of that stamina which generally portrays the healthy body. Melancholia and neurasthenia are likewise prominent features in the long-neglected case. Of course, in such a situation, where the blood is anemic, the nervous system depressed, the total resistance of the body is indeed greatly lowered toward infection and other common enemies of existence. Appetite is usually markedly decreased, constipation progresses, digestion is faulty.

Fourthly, there is a group of symptoms which may be justly regarded as complications to the existence of hemorrhoids. These consist of a group of misreferred pains which have in some instances been referred to as " reflex pains " by contemporary authors. Such a statement is erroneous, since there is no such thing known to physiologists as " reflex pain." What is meant in this instance is a misreferred sensation, the source of irritation being in the rectal mucosa and the transference of impulse taking place in the cord or in the posterior spinal ganglion root. The sensation is erroneously referred to the somatic areas supplied by these segments. (Fig. 6.) These happen to be the regions of the sacral iliac joints and the posterior aspect of the thighs and legs as far down as the heel. They are, of course, frequently confused with so-called " rheumatic pains," but their true nature is confirmed by their complete disappearance with the removal of the hemorrhoids.

Illustrative of the danger of neglect, let us take for consideration the life history of a neglected external hemorrhoid. In the average case, treatment of external thrombotic hemorrhoids is a relatively simple matter. Incision, evacuation of the clot, and packing of the wound give instant relief, and good after-care will result in complete success. But what happens to a thrombotic external hemorrhoid that is not treated surgically? Do they cure themselves or do they result in something more serious? There are, of course, many patients who dread the knife in even so small a procedure, and who will suffer untold discomfort to avoid it. Such persons will usually absent themselves as soon as one suggests surgical treatment. They will try one or more of the many salves or suppositories offered as " cures " for piles. It is my purpose here to inquire into the developments in this class of patient.

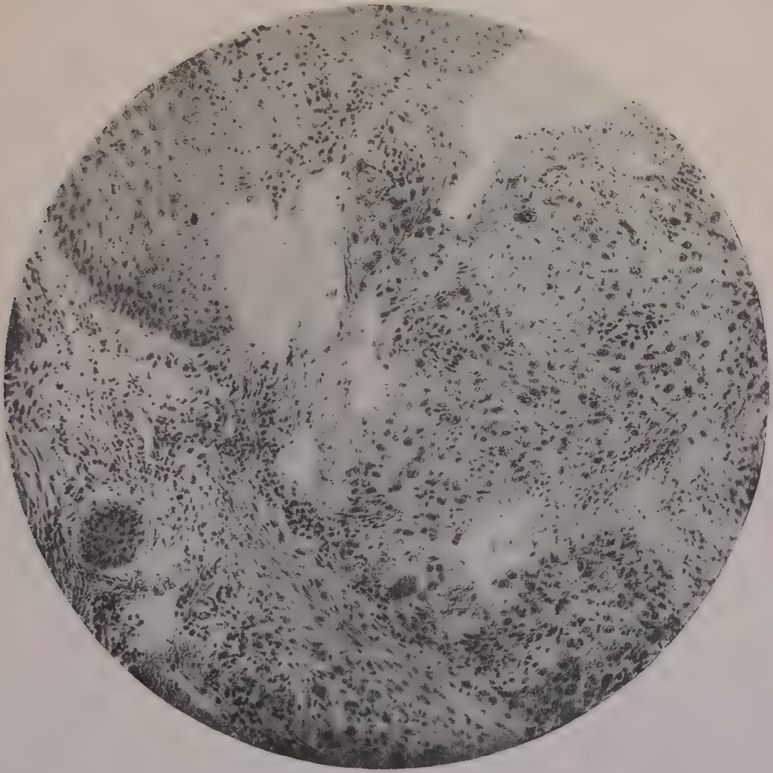

FIG. 111.—Epithelioma resulting from chronically ulcerated external hemorrhoids.

In the last three years I have been able to trace, in several cases, a history that definitely placed the responsibility for a rectal disease on a preëxisting external thrombotic hemorrhoid.

Following is the most convincing instance that occurs to my mind:

A middle-aged man, who had never been ill before, with the exception of the usual diseases of childhood. Of late years he had led a more sedentary life than usual, and in consequence had become subject to occasional attacks of constipation. During one of these periods, while straining in defecation, he felt a sharp, stinging pain on the right side of his anus. The pain continued throughout the following day, and he found that a lump had formed at the point where he felt the pain. Becoming alarmed, he consulted a physician, who advised immediate incision and evacuation of the clot. The patient, however, fearing what seemed to him a formidable operation, excused himself and upon the advice of a friend applied ichthyol ointment. In addition, at the advice of another friend, he used several boxes of ichthyol suppositories and a hot-water bottle. For several days his discomfort increased. At last the pain and throbbing reached a point where he could tolerate it no longer. He called a physician, who told him he had a rectal abscess and should be operated upon immediately. After much persuasion, he finally agreed to submit to this on the following day, but during the night the abscess broke and he felt so much relief that no amount of persuasion could induce him to allow the operation.

For some weeks following this the patient had a discharge from the place where the abscess had been. His physician warned him of the danger of fistula formation, but as the discharge finally decreased, the advice was disregarded. A few months later another abscess formed in exactly the same position, but, confident in the powers of his suppositories, he refused surgical aid and the abscess broke again, this time into the rectum. In the six months following this, he had no less than three such attacks. During these, however, he had allowed a surgeon (a different one again) to " lance " them after freezing with ethyl chloride. The scars of these punctures were about three-eighths of an inch in length and the amount of drainage accomplished may be estimated therefrom. Throughout the latter four months of this time the patient had a host of muscular and joint pains which were variously diagnosed as sciatica, neuralgia, muscular rheumatism, and rheumatic arthritis; and he met with further tribulation in the occurrence of a severe influenzal attack. In a few weeks he recovered from this, though it left him very weak. Perhaps it was this that lowered his vitality sufficiently to permit the events which followed.

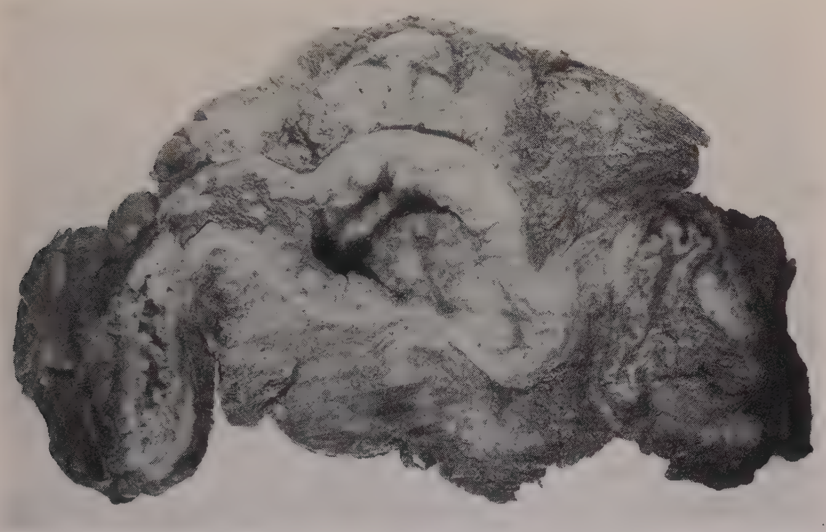

FIG. 112.—Cancer of the rectum which undoubtedly originated in neglected internal hemorrhoids.

About a month after his influenzal attack he was afflicted with a generalized furunculosis and endocarditis. Staphylococcus aureus was found in cultures from his furuncles. His blood culture was negative. With medical care these two conditions were controlled, but his rheumatism persisted. Strangely enough, in the months of endeavor to cure his rheumatism, not even a suggestion of a rectal examination had been made by any of his attending physicians.

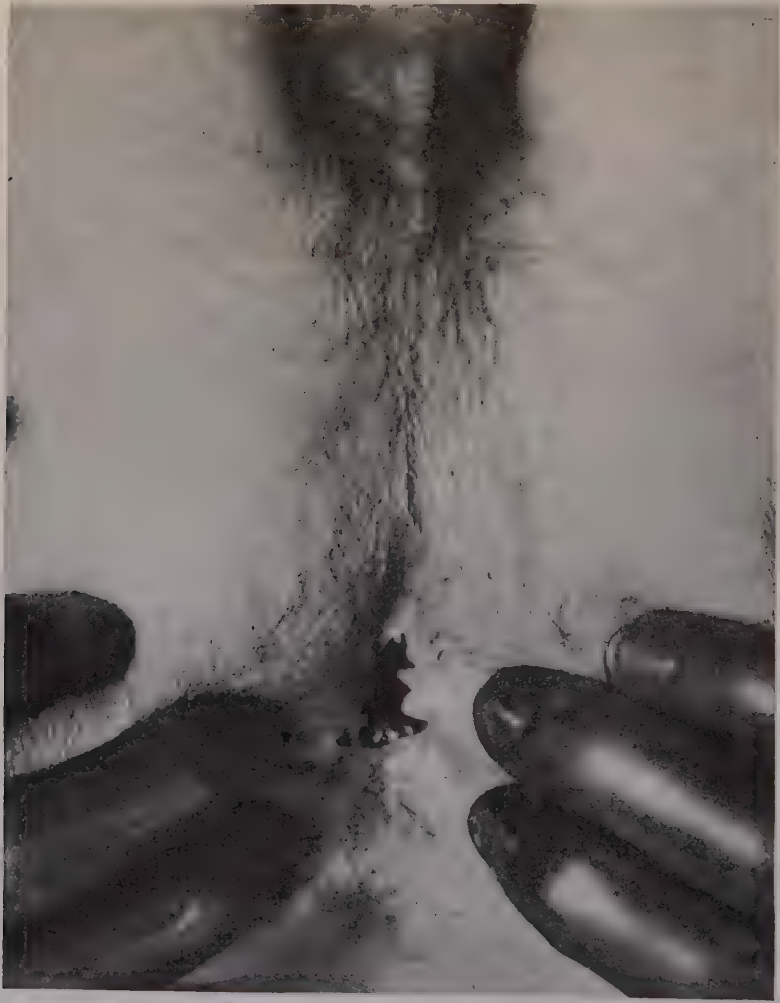

Fig. 113.—Anal ectropion resulting from overzealous removal of skin during hemorrhoidectomy.

At about this time the patient apparently threw discretion and pride to the wind and hinted to his physician that perhaps it was his rectal trouble which was causing all the trouble. At this hint the physician made an examination, and referred the man to a rectal surgeon for treatment. At operation, then readily agreed to, a large chronic ischiorectal abscess was found with a fistulous tract leading into the anal canal. The cavity was laid wide open, curretted and packed. At the present writing, six months later, the abscess and fistula are cured and the patient is free from rheumatism, though he still has a heart murmur.

I readily agree that the sad train of events described above does not occur in every case. At least part of the trouble could have been avoided by a more coöperative frame of mind on the part of the patient. However, the possibility must be conceded that all external thrombotic hemorrhoids *may* become infected. Equally certain it is that many of them *do* become infected. This conclusion is based on the history given in many cases of rectal abscess and fistulæ.

There can be but one conclusion to be drawn from the circumstances: *External thrombotic hemorrhoids should be treated surgically.*

The cause of all the complications and sequelæ mentioned up to this point may be stated in one word—*neglect.* The appropriate method of dealing with these complications may also be stated in one word—*treatment.* And this treatment should be based on a judgment of the requirements of the particular case presented. Reference to page 132 is suggested for detail as to adequate treatment.

We have dwelt at length on the complications and sequelæ which may arise from neglect. What then are those that may arise from therapeutic procedures directed toward the treatment of hemorrhoids? This is best considered from the standpoint of the particular treatment used.

Complicating conditions which may result from treatment are as follows:

Immediate complications possible:

1. Weakness and confinement to bed.
2. Pain.
3. Reflex retention of urine.
4. Hemorrhage.
5. Perianal edema.

Later complications possible:

1. Local infection such as abscess and sepsis.
2. Stricture or anal stenosis.
3. Fissure.
4. Incontinence.

Sequelæ possible:

1. Anal skin tags.
2. Anal ectropion.
3. Recurrence of hemorrhoids.

I believe it wise to discard at the outset of any discussion relative to complications the glowing statements and statistics of enthusiasts on any one particular treatment. We are, after all, concerned here with the facts rather than the sentiments in the matter. It is well to state here also certain factors common to all methods which have a bearing on the occurrence of and the complaint from complications.

Foremost among the factors common to the various treatments is the item of *temperament*. We all know that there are " nervous " people and " plethoric " people, and this difference in temperaments among patients must be considered when a form of treatment is to be decided upon. What would be scarcely annoying to one patient might be excruciating pain to another. Again, when local or sacral anesthesia is employed, it must be borne in mind that the misery of mental strain while the operation is in progress is to a hypersensitive person quite as distressing as actual pain would be. It is well to bear this in mind when selecting a case for local or for sacral anesthesia, since the unsatisfactory results which will surely follow its employment in an unsuitable case may lead to an unwarranted condemnation of the method.

Another common factor is that of *position* following operation or treatment. I have had such excellent results in the form of comfort to my patients by the use of the pelvis high position described on pages 138–140 that I believe we must in justice to our patients make use of this or a similar position in order to give maximum comfort following therapeutic procedure.

A third factor common to all the operative procedures is the senseless employment of the "*rectal plug*" or "*whistle*" following an operation. (Fig. 88.) It is a brutal, unnecessary implement and one, I am sure, which no doctor would willingly have used on himself. We cannot very well judge of the merits of any operative procedure if we insist on placing the anal canal under the obligation of accommodating an object much larger than its normal calibre at rest. Yet the fact is that this contrivance is still in use.

Complications after the Clamp and Cautery Operation

Following this operation the patient is usually confined to bed for four or five days. When sacral anesthesia is employed instead of general anesthesia, the period of confinement is shortened by a day. The patient is usually able to walk at the end of this time, but he is by no means himself, in so far as strength is concerned. The average case is not fit to return to work in less than ten days. The discharge to duty of a patient in less time than this is more often prompted by professional pride than by a serious consideration of the patient's welfare.

Syms, who is an ardent advocate of the clamp and cautery method, states that on the basis of a series of six hundred consecutive cases he concludes that " it is the most comfortable and least painful method," but the sense of euphoria or well-being which he finds is not so apparent to the majority of surgeons to whom I recently submitted a questionaire on the specific question of the comparative pain in these two operations. In response to such inquiry only twelve per cent. considered the ligature with excision method most painful. Thirty-three per cent. were of the opinion that both are equally painful. The majority considered the clamp and cautery method the " most painful." My own experience has been somewhat along the same lines, though not to the same extent. My observation is that pain occurs slightly more frequently when the clamp and cautery method is used. The occurrence and intensity of pain, however, in this or any other operative procedure involving the ano-rectal tissues may be reduced to minimum by the omission of a " rectal plug " or " whistle " and by a utilization of the pelvis high position described on pages 138-140. When pain does occur, it is well to inquire as to whether the patient has urinated since the operation. If unable to void, and if the bladder is found to be distended, prompt catheterization will often afford relief. Should the pain not abate, following the use of such simple measures as the pelvis high position or a hot-water bag to the perineum, I have been using ampules of morphine sulphate, gr. 1/4, in magnesium sulphate solution. These have given excellent satisfaction. The action of the magnesium sulphate is that of prolonging the analgesic effect of the morphine.

Reflex retention of urine occurs in some cases, but is never a serious matter. If one has the forethought to leave a standing order for catheterization twelve to eighteen hours after the operation, the patient will be saved much discomfort and the nurse spared much worry should there be any inability to void voluntarily. If catheterization is done, the patient should be given urotropin, grs. 5, every three hours until he can void voluntarily.

Perianal edema is more frequent following clamp and cautery than following the ligature method, but it is not in itself a serious matter. Proper position and the use of a hot-water bottle to the perineum usually suffice to cause its subsidence.

Courtesy of Kloman Instrument Co., Washington, D. C.

Fig. 114.—McWhorter knot tyer. Particularly of value in tying off bleeding points in the rectum.

Hemorrhage is the one serious complication to be feared following this operation. This is more particularly true when the stump left following cauterization is not sutured. It does not occur very often, but when it does it is a very troublesome and dangerous complication. It is troublesome because of the extreme difficulty in locating the bleeding point, or all too often, several bleeding points. It is dangerous since concealed bleeding may occur into the rectum and a very considerable loss of blood may have been suffered before its discovery. Care in thoroughly cauterizing the stump with a cautery point which is not too hot, and the precaution of introducing a mattress suture in the stump before removing the clamp, will in many instances prevent such occurrences. When, however, bleeding does occur in any quantity, there is only one course to pursue. The bleeding points must be caught with hemostats and ligated. This is by no means as easy as it sounds. The charred condition of the stumps makes the detection of the source of bleeding difficult, and manipulation in the rectum to find it not infrequently throws a strain on the other wounds which they cannot withstand. If they, too, break loose, the situation is a sorry one indeed. Some prefer immediate packing of the rectum with gauze instead of searching for the bleeding vessel. Pressure, of course, will control the hemorrhage. In this connection I suggest the rectal pack shown in Figures 115 and 116. This, I believe, is the contrivance of Buie. It is easy to introduce, efficient in its action, and easy to withdraw. It consists of a four-ply gauze strip which has been threaded with stout linen in such a manner that the black thread when tightened causes pressure. When one desires to remove the packing, the black thread is untied and the white thread pulled upon. The packing then unravels without trouble.

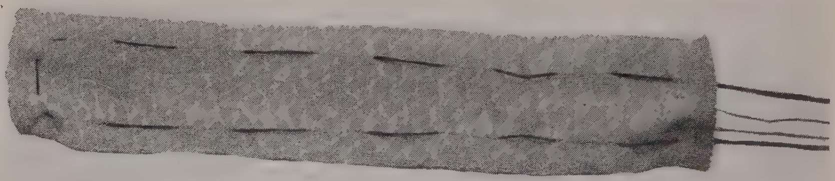

Fig. 115.—Rectal packing pad for controlling hemorrhage in the rectum. Pad unfolded. Note two strings. The outer or black is tied when compression is desired. When one wishes to remove this packing the black string is untied and traction is exerted on the white or central string. The pad then easily unravels itself.

The possible later complications, such as *infection, sepsis, incontinence,* or *stricture,* do not occur if the operation has been properly performed. If unnecessary force was used in dilating the sphincter, or if the sphincter has been damaged by the cautery (which ought not happen), then we may get either a partial or a considerable incontinence, which is particularly noticeable when the feces are not formed. A certain amount of relief from this disagreeable sequel may be obtained by a diet which favors the formation of the feces. The use of bismuth and chalk mixtures also helps, though they inevitably induce a constipation which is productive of other trouble. Infection, as evidenced by abscess, and fistula formation are decidedly less apt to happen following the clamp and cautery operation than after any other operative procedure. The same may be said for stenosis and stricture.

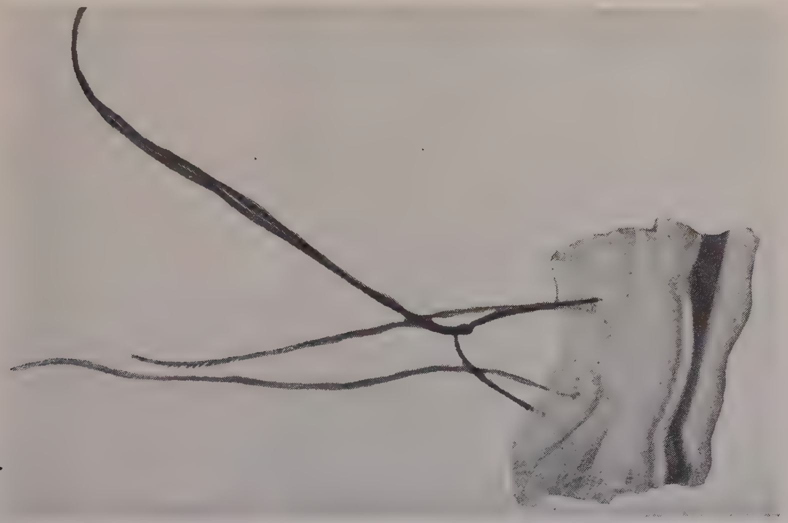

Fig. 116.—Rectal packing pad tied.

Complications after the Ligature with Excision Operation

Complications possible following an operation by the ligature with excision method are fewer than by any other method. We have, of course, a short period of weakness and confinement to bed such as follows any of the operative procedures. The patient, however, need never (in the average case) be confined to bed more than two or three days. The reason for this is that when this method is used local anesthesia can be employed. With its employment there is, of course, less shock to the patient. When general anesthesia or sacral anesthesia is employed, we must, of course, confine the patient to bed a little longer. It is quite useless to state a definite number of days that all patients will require confinement for the obvious reason that cases vary and patients vary. Cases may be extensive or slight; patients may be robust or weak. The exact period of confinement must, therefore, be left to the judgment of the physician, the patient's welfare being the standard to guide us.

Weakness is, in my observation, less than following any other operative procedure. The patient is usually able to walk around with safety on the fourth day, but his strength does not feel normal to himself till a week has elapsed. The use of arsenoferratose (Merck), fl. ʒ 1, t.i.d., a.c., following hemorrhoidectomy has given me excellent satisfaction in combating this feeling of weakness which normally follows any operation requiring confinement to bed for even a few days.

Pain.—If the patient is placed in bed in the pelvis high position postoperatively, and if at the time of operation a small flatulence catheter is inserted into the anal canal instead of a large plug, very little pain will be experienced by the average case. There is, to be sure, a burning sensation or soreness which occurs as the local anesthesia wears off. This, however, lasts but fifteen or twenty minutes and is readily relieved by a hot-water bottle to the perineum or by a 7½ grains tablet of allonal (Roche). In cases where intense pain is experienced, an investigation should be made as to the state of the bladder. If this be distended, and the patient cannot void voluntarily, then catheterization should be done promptly. If this does not relieve the pain, morphine, gr. ¼, should be given, preferably with magnesium sulphate, as when given in this form the analgesia is more complete and lasting. The drug can be obtained in this combination in the form of ampules or carpules. Ampules, morphine sulphate with magnesium sulphate (Lilly). Carpules, morphine sulphate with magnesium sulphate (Cook).

Reflex Retention of Urine.—If a rectal plug, such as is shown on page 178, is employed, one may expect reflex retention of urine in almost every case. If the latter is not used, retention only occurs occasionally and then is temporary. No patient should be allowed to go longer than twelve to eighteen hours without urinating. If no distress is complained of, it is occasionally justifiable to defer catheterization for a few more hours. As soon, however, as the patient becomes uncomfortable, and certainly within eighteen hours, whether he is comfortable or not, catheterization should be done. A hot-water bottle to the region of the bladder, the sound of running water as from a faucet, or, finally, the upright position, may be tried in an attempt to induce voluntary micturition. In these attempts, however, the patient should be cautioned against straining, as this will throw much strain on the rectal wound. The administration of urotropin, grs. v. q. 3 h., in a glass of water should be started immediately. The object of the latter is to minimize the danger of a cystitis incident to repeated catheterization.

Flatulence frequently follows any rectal operation such as hemorrhoidectomy and is a reflex effect on the upper gastrointestinal tract. It may be reduced to a minimum by an avoidance of undue dilatation of the sphincters, by gentleness in operative procedure, and finally by the use of the pelvis high position and the flatulence catheter described on page 179.

Should flatulence be extreme or persistent, I know of nothing more promptly effective than surgical pituitrin. One millilitre of this should be given subcutaneously. When pituitrin is given, it is particularly desirable to have a flatulence catheter in place, as the gas forced into the rectum will otherwise induce an unwelcome and distressing desire to evacuate. With the flatulence catheter in place, the gas forced into the rectum is afforded ready delivery without the least disturbance to the patient. Indeed this safety valve functions without the patient's knowledge.

Hemorrhage.—If the ligature with excision method of hemorrhoidectomy is properly performed, hemorrhage is exceedingly improbable, if not absolutely impossible. It is by far the most exact surgical procedure for the removal of hemorrhoids. In the opinion of many, it is also the least painful operation postoperatively, and with this I quite agree. When simple ligature is employed, the ligature has been known to slip off the stump and thus allow bleeding of the stump. However, when the hemorrhoid has been transfixed by a double ligature, this accident cannot readily occur. Should the ligature slip off or be absorbed before complete healing has occurred, bleeding may occur. This may be prevented by care in tying the ligature, the employment of a double surgical knot, and by using a heavily chromicized or silver-impregnated catgut. Occasionally, bleeding results from the passage of a hardened fecal mass. The latter may actually tear off the ligatures or cause the knot to slip. To prevent this, it is advisable to give mineral oil freely following the operation and to give an oil enema immediately prior to the first evacuation following the operation. In this manner, the feces are softened and cause no undue strain to be placed on the ligature. In the event, however, that bleeding does occur in any appreciable amount, the rectum may be packed in the manner described on page 258. As a last resort, a small-size speculum may be introduced—the area sponged dry—the bleeding point found and tied. I have found the McWhorter knot-tying forceps (Fig. 114) very serviceable in this connection. The above outlined procedure will be found a very much easier and simpler task than when the clamp and cautery method has been employed. The reason for this is that there is no seared tissue to obstruct the view and the bleeding usually comes from a single point.

PERIANAL EDEMA does not occur after a carefully done operation. If a portion of the skin has been included in the ligature (as it should not be), edema and pain result. In another instance the edema is the result of overzealous stretching of the sphincters. In any event, the use of the pelvis high position and a hot-water bottle to the perineum will usually afford relief. In extreme cases, numerous short radial incisions may be made through the perianal skin to allow drainage for the extravasated lymph.

INFECTION of the anorectal tissues following operative procedures is comparatively infrequent. This is indeed remarkable when one considers the abundance and omnipresence of bacteria in this area. When care is taken to avoid unnecessary crushing and tearing of tissues, they seem to be quite capable of taking care of themselves. The surgical principles which have been found by proctologists to be particularly applicable to rectal surgery are mainly these: Owing to the nature of the circumstances under which operative measures are performed (*i.e.,* in a non-sterile area), it is presumed that infecting organisms will gain entry to the wound soon after the operation. With this situation in mind, the wisdom of leaving the wound open is quite apparent since it is the immediate demand of an infected hemorrhoidectomy wound in which suturing of the skin or mucosa following removal of the hemorrhoid has been employed. The operation may look neater than the ligature with excision method, but the sutures soon become infected and break open. In this event, we have, of course, exactly what we would have had if we did not suture the wounds. The only cases of abscess and fistula which I have seen following hemorrhoidectomy have been in cases where suturing was employed.

ANAL STENOSIS OR ACTUAL STRICTURE may follow the ligature with excision hemorrhoidectomy in certain instances. This may be due to the removal of too much tissue at the time of operation, as, for instance, when more than three hemorrhoids are removed. It must be evident that when extensive sections of the anal canal are removed, the total amount of such may approximate in effect at least that of the justly condemned Whitehead operation. The prevention of this complication may, therefore, be accomplished by the exercise of proper judgment as to the amount of tissue to be removed. Another cause of stenosis may be found to rest in the natural tendency to contraction which is the nature of all newly formed scar tissue. This may be overcome by gentle daily digital palpation for about a week after the wounds have healed. The use of mineral oil by mouth tends to minimize the traumatism due to the passage of feces. Fissure may occur if the feces are allowed to become hardened or oversized. It may be avoided by the routine administration of mineral oil postoperatively. If it does occur, it is quite painful and should be treated by transcision of the external sphincter under local anesthesia.

INCONTINENCE is usually the result of forcible dilatation of the sphincters at the time of operation. Damage to these muscle fibres may lead to a partial and temporary incontinence. Usually no treatment is necessary as the sphincter will regain its tone within a week or ten days.

ANAL SKIN TAGS are a frequent sequel to this operation, and though not productive of much discomfort, yet they are a source of annoyance to the patient who is so inquisitive as to palpate the region. The reason for this is that he usually concludes that the operation was incompletely done and that some of his piles still remain. It is difficult to dissuade a patient from this belief, although in my opinion the condition is much to be preferred to one in which too much skin has been removed. In the latter instance, we have at first a better cosmetic result, but ultimately *anal ectropion, i.e.*, an eversion of the anal mucosa, results, accompanied by itching and soreness. (Fig. 113.) In other instances anal stenosis results. It is best to inform the patient that these redundant folds of skin are left purposely to allow for the normal contraction of the healing wounds. Then at a later date, a month perhaps, if they have not shrunk to an extent so as to be unnoticeable, they may be excised under local anesthesia. It is a simple, painless procedure, and one can then judge better as to the exact amount of skin it is safe to excise.

COMPLICATIONS AFTER OTHER OPERATIVE PROCEDURES

The majority of other operative methods of dealing with hemorrhoids are such purely individual methods that they live and die with their originator. Hence there is no fair method of learning the deficiencies of these methods, since unfortunately their originators are not readily disposed to admit, much less discuss, the possibility of complications or sequelæ following their operation. On the other hand, there are no surgeons who run a long enough series of cases done by this or that method to adequately judge of its shortcomings. It is this situation which we confront when attempting to estimate the true value of the various methods of Earle, La Place, Pennington and O'Connor. While in the hands of these surgeons, their respective methods have given satisfaction, yet no detailed statement is forthcoming as to the possible complications and sequelæ. My own experience with these methods has been confined to a few isolated cases by each method. Obviously, no conclusions can be reached from the data available. On the one hand we have prejudiced enthusiasm and on the other hand we have an insufficiency of observation. Concerning one of the other available methods of hemorrhoidectomy, however, there is abundant material for conclusions. I refer to the Whitehead operation, which was very popular among surgeons of twenty years ago. It is still being used to a certain extent in England and here in America, in isolated quarters where the light of modern surgical knowledge has not yet permeated. Suffice it to say that the complications which ensue upon its employment are both frequent and extensive. These are chiefly stricture, incontinence, or recurrence. The method is obsolete for very good reasons, these being its seemingly inevitable complications.

Complications after the Injection Method.—In the past, there has been much written and mentioned in discussions relative to the injection method of treating hemorrhoids about its complications. Unfortunately, much of this was true, but I believe a careful analysis of the facts of each particular instance will show that in each case the error lay with the surgeon's judgment or technique rather than with the method itself. No one will deny the fact that in the early days of its employment, starting with Mitchell in 1871, serious, horrible, and even fatal complications followed its use. It is well to bear in mind, however, that in those early days the method was being practised by men who were but poorly qualified to give any medical treatment, much less one like this, which requires surgical judgment and technical skill. Mitchell, the originator of the treatment, I am informed, was a blacksmith by trade, and many of those to whom he imparted the method were non-medical or at best medical men who, even in their day, when standards were lower than today, were classed as charlatans. The treatment was given to many cases, I am sure, that in this day would not be classed as hemorrhoids. We now know that the treatment is only applicable to cases of simple uncomplicated hemorrhoids. Then, too, the early practitioner of the method in the early days had little, if any, knowledge of the anatomy of the parts he had determined to treat. Complications were certain to occur under these conditions. Another fact noteworthy was that the strength of solutions used ranged from 50 per cent. to 100 per cent. carbolic acid—strengths which even the most daring of our modern medical men would hesitate to use. With the method, then, chiefly in the hands of non-medical or outcast medical men who knew little or nothing of the anatomy of the parts, careless or ignorant of diagnosis and reckless in the strength of solution used, what wonder then that serious complications and sequelæ should follow in the path of its use!

But times have changed, and though occasional complications and sequelæ result from the treatment, yet they are but a fraction of what they once were. Moreover, they are traceable in every instance to the same indiscretion which years ago brought disrepute upon the method, namely, errors in judgment as to the type of case suitable for the injection treatment, ignorance of the anatomy of the parts, errors in diagnosis, and finally, the employment of an unwarranted strong solution. With the avoidance of these errors in judgment and technique, however, the method compares very favorably with any of the other methods of treating simple, uncomplicated internal hemorrhoids.

I am aware that there are enthusiasts who claim that they have never seen complications following this method, just as there are advocates so ardent in their approval of other methods that believe their method infallible. My endeavor throughout this entire monograph has been to state the cold impartial truth. Viewed in this light, we find the following complications following the use of the injection method.

When properly performed in a suitable case, there need be no confinement to bed following the injection of hemorrhoids. Nor is there any weakness to be noted in the majority of cases. A few cases of a nervous type may complain of feeling faint following the treatment, but this is usually slight and temporary. A little aromatic spirits of ammonia easily dispels this giddiness, which, I have observed, is often purely psychological. I have known it to occur in an instance where the speculum was inserted, but the actual injection was purposely omitted. After the first treatment, the nervousness is usually absent. Incidentally, one need never fear actual syncope. This is particularly the case when the patient is in the knee-elbow position with head down. Syncope is quite impossible owing to abundant cerebral blood supply induced by this position. One disagreeable though not serious complication which may arise when the formula containing quinine urea-hydrochloride is used is that a systemic disturbance may arise in those patients who have an idiosyncrasy for quinine. It is well to ask the patients beforehand whether they have any such effect from the drug. I recall a case in which I neglected to ask this, but the patient informed me a few moments later that he felt as if he had taken quinine. The reaction noted is merely a hot flushing of the skin, a ringing in the ears, and sometimes a slight headache. Obviously in persons so disposed one of the other formulæ must be chosen.

Pain, either immediate or subsequent, is never a noticeable feature if the injections have been made in the proper location and in the proper strengths. If pain occurs at any time during the injection, it is an indication that the injection is being made too low. Subsequently a slight soreness may be noted. It usually lasts but a few hours and may be relieved easily with a hot-water bottle to the perineum, a hot sitz-bath, or some other simple remedy. If it persists, a tablet of allonal, grs. 5, usually suffices. Should the injected hemorrhoid prolapse through the anal orifice, as it occasionally will do, it must, of course, be immediately replaced before other attempts to relieve the soreness are tried.

A tendency toward frequent micturition may be noted after the injection treatment. It is a temporary reflex effect and does not give trouble. Reflex retention of urine and a tendency toward flatulence are of very rare occurrence. They may readily be dealt with as heretofore suggested.

HEMORRHAGE, of course, never occurs unless the hemorrhoid sloughs. This it will not do if properly treated. A few drops of blood may ooze out through the needle wound, but this is scarcely, if ever, noticeable. Perianal edema does not occur to any degree if the hemorrhoid has been properly injected. If the injection has been made too low, or if too much fluid has been injected, it may occur, but readily subsides following a hot sitz-bath.

ABSCESS FORMATION or sloughing of the hemorrhoid, though not frequent, does occur more frequently than any other complication possible after the injection treatment. When it does occur, it is an indication of carelessness on the part of the physician. If the hemorrhoid to be injected is wiped dry, if the needle has been sterilized, and if the solution is sterile, infection will not occur.

If 10 per cent. carbolic acid or 5 per cent. quinine urea-hydrochloride is used, chemical necrosis and sloughing will not occur. Anderson states that in all cases in which he has observed sloughing, the solution used was too strong. This is in keeping with my own observations and that of many others who use this method. One other error which will cause sloughing is the injection of too much fluid into the hemorrhoid. This leads to a sudden interference with the blood supply of the tissues and results in necrosis. It must be borne in mind that what the injection method attempts is a mild irritation productive of fibrosis and not a sudden necrosis. It is far better to use too little solution or too weak a solution and get a comfortable, satisfactory result than to use too much or too strong a solution, which will distress the patient and defeat the object of the treatment. It may take more time to treat conservatively, but it reacts to the patient's comfort and the physician's ultimate satisfaction. Should an abscess develop, immediate and complete evacuation is essential to proper treatment. If sloughing occurs, the area should be protected by the liberal use of butesin picrate ointment, an antiseptic and anesthetic ointment.

Of the later complications possible with the operative method, such as stricture, stenosis, incontinence, etc., it may be said that none of these occur following the injection method. Recurrence is possible and does occur in a certain number of cases. This is dealt with more fully in the following chapter.

Complications Possible Following the Radium Seed Method

In view of the admitted insufficiency of data on this method, owing to its recency, not much can be said as to its possible complications. In my series of thirty-five cases, the following observations were made:

Of the untoward effects noted, there were these: In one case, four days after implantation, the patient complained of a pricking sensation referred to the region of the sacrum. In two other cases the patients complained of slight sacral backache, which, however, passed off within another day. In none of these three cases were the effects noted sufficient to deter the patients from the performance of their daily duties. The nodules formed by the sclerosis of the hemorrhoid persist for six to eight weeks after the implantation and are quite evident upon proctoscopic examination. They are, however, definitely fibrotic and do not bleed nor give rise to pain or protrusion. Concerning the question whether the beneficent effects noted are permanent or whether recurrence is possible, I have, of course, but meagre data, as the longest case of my series at this writing is of but ten and one-half months' duration. No absorption of any kind whatever follows the implantation of radium seeds. Bleeding is stopped within a few hours and in the course of two or three weeks complete fibrosis has occurred. There is no pain attendant upon this procedure either at the time of implantation or subsequently.

Complications after Electrotherapeutic Methods of Treating Hemorrhoids

This has always been an unwritten chapter in any description of electrotherapeutic methods of treating hemorrhoids. The reason for this is to a great extent the fact that most of the descriptive literature on the subject has in the past emanated from the manufacturers of the machines required for their administration. Some of these gentlemen appear to be under the illusion that it would be poor business to admit the limitations of their apparatus and to allow the matter of its therapeutic value to rest with the medical profession. As a matter of fact it would be more profitable and certainly more honest to claim nothing more than can be demonstrated.

Following the electrocoagulation and desiccation methods pain and soreness occur. At times it is moderate; at other times quite severe, sometimes enormous. If the patient has been told that he will have no after-pain he is apt to be quickly disillusioned. Usually he is not confined to bed for more than a day or two, sometimes not at all. However, in the majority of cases he is not fit to attend to his occupational duties for several days. When the slough separates or is torn away by the passage of feces, bleeding may be extensive. As the sloughing process proceeds, infection may occur with abscess formation, or marked symptoms incident to the absorption of toxic products may be noted. Anal stenosis or stricture is exceedingly apt to occur.

After galvanopuncture, if sloughing be avoided, there are no untoward effects other than local soreness and pain for a few days. If sloughing occurs, any or all of the above-mentioned complications may occur.

Ionization by simple galvanism is as a rule followed by no complications. There is no local soreness or pain, no confinement to bed nor loss of time from work. It is the safest though least efficient of the electrotherapeutic procedures.

CHAPTER XVIII

THE RECURRENCE OF HEMORRHOIDS

When one says that in a certain case hemorrhoids have recurred he presumes, of course, that said hemorrhoids have been removed, but facts are not infrequently contrary to this assumption. In other words, it not infrequently happens that one or more of the hemorrhoids are left, and when conditions unfavorable to their presence arise these remaining hemorrhoids become aggravated and the symptoms of hemorrhoids recur. One must not make the error of confusing the skin tags or redundant skin folds which may persist following any of the hemorrhoid operations with true hemorrhoids. The patient, of course, will fall into this error and may at times assert that his hemorrhoids have not been removed completely, or should he discover it a little later, will report that they have returned. As stated in a previous chapter, these skin tags are not hemorrhoids and hence should not be considered from the standpoint of recurrence.

On the other hand, there are no doubt bona fide cases of recurrence even after thorough removal. Various enthusiasts of one method or another assert that after their particular method of treatment hemorrhoids never recur. Thus the ardent surgeons claim that they never see a recurrence following the ligature operation; others equally ardent that they never see a recurrence following the clamp and cautery method; while the advocates of the injection treatment are equally fervid in their praise of injection treatment as the one treatment which is but rarely followed by recurrence. Needless to say, such statements are based on biased conclusions, and to the general practitioner they are at the best misleading. Statistics derived from such sources are to my mind patently incomplete, obviously distorted, and at best only of relative value. In so far as my own experience in the treatment of hemorrhoids is concerned I have no favorite method of treatment, that is, no one method which I use to the exclusion of all others. I believe that each case is a problem by itself and requires the exercise of judgment and a careful weighing of the merits of each one of the methods at our disposal before the line of treatment in any given case is decided upon. On the subject of recurrence, therefore, an unbiased statement such as is offered here can be of much value.

In instances where the primary cause of the hemorrhoids has not been removed recurrence may occur regardless of the particular method used. Thus in the instance where chronic constipation or the pelvic congestion caused by a pelvic tumor or a congested liver still continues to exist, it seems only natural that those portions of the hemorrhoidal veins which have been left following the operation should suffer varicosity in exactly the same manner as the portions which have been previously removed, and in fact this does occur. Therefore, when a case comes to us complaining of a recurrence, the wisdom of a thorough general examination will be apparent. Such an examination should be particularly directed toward the detection of those conditions which are known to be instrumental in producing portal plethora and hence increasing the pressure in the hemorrhoidal veins. These and others may be briefly stated as follows:

1. Cirrhosis of the liver.
2. Neoplasm of the liver.
3. Neoplasm of the upper bowel.
4. Ovarian cyst.
5. Fibroma of the uterus.
6. Retroverted uterus.
7. Hypertrophy of prostate.
8. Stricture of the urethra.
9. Constipation.
10. Colitis.
11. Valvular lesions of the heart.

It has been my experience to have cases which had been operated on previously for hemorrhoids by reputable surgeons present themselves for a condition which was not hemorrhoids, despite the patient's statement to that effect. In these instances what is mistaken for hemorrhoids is in reality a prolapse of the mucous membrane of the rectum, or in some instances a complete prolapse of the rectum. It is, therefore, wise to examine all of these cases of recurrent hemorrhoids in this particular.

In order to do justice to the patient with recurrent hemorrhoids it is likewise highly advisable to have an X-ray study made of the colon for the possible presence of new growth in the sigmoid or transverse colon.

As to whether hemorrhoids occur after a properly performed hemorrhoidectomy: it must be admitted that such a recurrence is possible. The explanation of it has been previously given, that is, the original causes of the hemorrhoids have been allowed to remain.

It must also be admitted that recurrence does occur following the injection method of treatment. This, however, never seems such a serious matter, for the injection treatment of hemorrhoids may be repeated without any discomfort to the patients, and they always seem quite willing to submit to it. However, the complete physical examination suggested above should by no means be omitted.

Whether the recurrence is possible following the radium seed treatment is at present merely speculative, since the treatment has only been followed for the past year at my clinic and it is as yet too early to make definite statements concerning it. On purely theoretical grounds there is no reason why they should not recur in exactly the same type of case in which they recur when other methods are used.

From the standpoint of the practice of medicine it is, of course, less embarrassing for hemorrhoids to recur following the injection treatment or radium seed treatment than following an operative procedure, since the laity is always under the impression that the operation could not have been done thoroughly, whereas they are more lenient in their attitude towards the injection treatment.

I will sum up my views on the recurrence of hemorrhoids as follows:

Recurrence is liable, therefore, to occur in those cases in which hemorrhoids have been incompletely removed by operation or insufficiently treated by the injection or radium seed treatment. They may also recur, regardless of the method used in their treatment, when the primary cause of the hemorrhoids has been allowed to continue in existence. For all practical purposes the proportion of recurrence is greater in the injection method of treatment than in a case where operative measures have been used.

CHAPTER XIX

POPULAR FALLACIES CONCERNING HEMORRHOIDS

During the course of a practice devoted entirely to recto-colonic diseases, I have frequently encountered certain fallacious opinions concerning the nature and characteristics of hemorrhoids and other fallacies concerning the methods now in vogue for their treatment. They are stated here as fallacies in the hope that others may not be led in error by them. Thus it is my opinion that it is erroneous to believe:

—that extensive stretching of the sphincter muscles is a necessary preliminary to a hemorrhoid operation.

The ordinary manipulation incident to grasping the hemorrhoids and bringing them down through the anal orifice is quite sufficient to induce dilatation of the sphincters to the extent compatible with their welfare. When deliberate dilatation is performed, particularly if done with instruments, the stretching of these muscles often resolves itself into a tearing of the sphincteric fibres.

—that opium suppositories have any value in the palliation of the pain and soreness associated with hemorrhoids.

Attempts to introduce the suppositories may readily traumatize the hemorrhoids far more than the opium could possibly soothe them; moreover, opium has no local anesthetic action whatsoever. Whatever opium is absorbed is certain to induce a constipation which in itself aggravates the hemorrhoidal condition.

—that bleeding from hemorrhoids is beneficial.

This opinion is frequently expressed by the laity, occasionally by physicians. In persons afflicted with high blood-pressure, it is conceivable that the loss of blood may have a slight temporary effect upon the blood-pressure, but neither in this nor in any other circumstance can the bleeding be construed as being beneficial.

—that the injection method of treating simple internal hemorrhoids is unethical.

That method cannot be termed " unethical " because of the standing of those who use it. There are more ethical than unethical physicians using this method, but because of its early association with irregulars, the charge that it is unethical is frequently made. It would be just as illogical to claim that local anesthesia is unethical, because that, too, is used by the irregular practitioner.

—that the injection method of treating hemorrhoids is applicable to all forms of hemorrhoids.

Experience has shown that this method is only applicable to one type of hemorrhoid, and that is to simple, uncomplicated internal hemorrhoids.

—that hemorrhoids are neoplasms.

This statement is frequently found in text-books on rectal diseases. It is absolutely erroneous and is merely in keeping with the general lack of exact pathological knowledge on the subject of rectal diseases. The process of hemorrhoid formation is a degenerative lesion of the veins and is not a neoplasm.

—that hemorrhoids are peculiar pathological conditions similar to no other condition of disease.

The process of hemorrhoid formation is that of varicosity, and is absolutely identical in principle with that of varicocele formation and varicose veins of the leg.

—that the average set of statistics concerning the frequency of hemorrhoids in relation to sex, age, and occupation are worth anything.

The usual statistics are obtained under such special circumstances and with such variable factors that they are scarcely of any value. Thus, a gynecologist thinks hemorrhoids are more frequent in females; the general surgeon thinks that they are more frequent in males; an industrial surgeon believes they are more prevalent among the working classes; a general practitioner that they are found in all classes. It is a matter of circumstances altering cases.

—that hemorrhoids are harmless conditions and of no clinical importance.

The readiness with which suppositories and salves are recommended and used in this condition unfortunately supports this view.

—that it is not necessary to examine a patient who says he has " piles."

There have been many cases of cancer of the rectum which have been treated with suppositories because of this fallacy.

—that hemorrhoids are due to the upright position of man.

If this were true, the entire population of the earth would be entitled to hemorrhoids.

—that it is necessary to place a " rectal plug " in the rectum after operation to prevent hemorrhage.

Carefulness in technique is the surest preventive of hemorrhage. When one uses the " plug," retention of urine and pain are bound to follow.

—that there is but one method of treating hemorrhoids.

The exercise of judgment is far more beneficial to one's patients than consistency in riding a hobby.

—that the selection of the type of treatment is entirely in the hands of the surgeon and that the patient has no right in the matter.

When the doctor himself becomes a patient, he is more than ready to give suggestions as to the type of treatment to be used on himself. He is just as adverse to an operation as the lay patient is.

—that all rectal pains are due to "piles."

Take nothing for granted; take two minutes and give the patient the benefit of a rectoscopic examination.

—that hemorrhoids are hereditary.

A distinction must be drawn between a hereditary weakness in vascular tissue and the inheritance of actual hemorrhoids.

—that extensive preoperative catharsis and enematization is a necessary preliminary with hemorrhoidectomy.

Patients do much better with the very simplest kind of preparation.

—that it is necessary to "tie up" the bowels following a hemorrhoid operation.

The average case that has not been subjected to preoperative catharsis will *not* have a bowel movement for two or three days even if tincture opii is omitted.

—that hemorrhoidectomy cannot be done as completely under local as under general anesthesia.

—that rectal wounds will always heal by first intention if they are sutured at the time of operation.

As a rule, infection of the wound occurs, the sutures slough out, and we have a worse condition than would have existed had the wound been left open.

—that there is a capillary form of hemorrhoids.

Pathologically, this condition consists in a telangiectasis of the mucosal capillaries.

—that there is an arterial form of hemorrhoids.

This condition is often the remains of a partially cured hemorrhoid in which venules have been obliterated, but the artery remains. The structure is really a polyp.

—that it is required by law that the first bowel movement shall be painful.

There are simple measures which may be taken to make this event painless.

—that the injection treatment of hemorrhoids is invariably followed by sloughing.

When this treatment is properly administered, sloughing never occurs.

—that the only cause of " piles " is constipation.

—that hemorrhoids occur in children under three years of age.

Most of these cases are really prolapse and not hemorrhoids.

—that the general surgeon operates on hemorrhoids with the same care he would use on almost any other condition.

Usually the junior interne, who is the most inexperienced man on the staff, has these cases assigned to him. If the general surgeon operates at all, in most instances he never personally treats his case again.

—that the average graduate in medicine ever had presented to him even an elementary study of the commonest of rectal diseases—hemorrhoids. In some grade A schools, the course in rectal diseases merely has a place in the curriculum—a final resting-place. The course itself is never given.

The foregoing terse statements of what I regard as false opinions concerning hemorrhoids are submitted for the constructive value they may have in inducing the careful consideration the condition warrants. There is no surgeon of average skill who cannot successfully operate upon cases of hemorrhoids, nor is there any general practitioner of average skill who cannot intelligently treat cases of hemorrhoids. It is with a full consciousness of this fact that the above is offered. Thus while not impugning the professional skill of our medical colleagues, I *do* recommend a more careful consideration of these cases and the exercise of sounder judgment in coming to conclusions as to the nature of hemorrhoids and the consistency of therapeutic methods suggested for their treatment.

CHAPTER XX

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